

The Honorable Fred Upton
Chairman
House Energy and Commerce Committee
Washington, DC 20515

The Honorable Henry Waxman
Ranking Member
House Energy and Commerce Committee
Washington, DC 20515

April 5, 2013

Dear Chairman Upton and Ranking Member Waxman:

Thank you for the opportunity to respond to your request for information regarding the Renewable Fuel Standard (RFS) and the so-called blend wall. In 2007, Congress adopted a forward-looking policy designed to encourage the integration of low carbon, renewable fuel into our nation's fuel supply. The RFS is paving the way to a competitive market for transportation fuels in the United States that will truly break our dependence on oil, cutting the link between American families and OPEC, and achieving energy independence with lower prices and cleaner fuel.

Unfortunately, in the face of this success, the RFS is under attack. Embedded interests like the oil industry have launched a campaign to scrap the policy. As with any fundamental shift that breaks a profitable monopoly and seeks to move to cleaner, cheaper alternatives, incumbent interests are seeking to protect their market share. As explained by an oil analyst on Fox News on March 11, 2013, "Remember, refiners don't make ethanol so they're not really all that happy about making E15. What they want to do is make gasoline because that's what they make money off of." As the Committee considers the responses you receive to the questions presented, we urge you to keep this economic reality in mind, as it lies at the heart of the Committee's work on this topic.

The RFS offers the long-term stability sought by the private sector and investors, but the policy also acknowledges the reality that conditions shift over time, and provides the EPA with significant flexibility to make adjustments to annual volumetric targets that take into account both annual gasoline demand as well as anticipated production of cellulosic and advanced biofuels. Additionally, Congress delayed the start of its blending targets for the advanced and cellulosic sectors and provided for compliance flexibility, creating a credit market to insulate refiners from supply fluctuations in the renewable fuel market.

When the RFS was adopted in 2007, it was clear that over time higher blends of renewable fuel and new infrastructure would be needed to fulfill the vision of the policy. Attempts to claim that changes in demand for oil due to the economic downturn or 2017 CAFE standards now require adjustments to the legislation do not reflect reality and should be rejected.

Congress anticipated that the private sector would respond to the market signals of the policy and invest both to develop and commercialize new products that would be required to meet the vision of the RFS and to install the delivery systems necessary to implement these changes. Congress' expectation that private industry would rise to the challenge was not unreasonable, as the country effectively made this type of transition before, moving from leaded to unleaded gasoline.

The challenge presented by the RFS has been embraced by the renewable fuel sector. Since 2007, first generation production has increased and displaced 10 percent of petroleum in our fuel supply, with 13 billion gallons blended in 2012. The future growth in the sector lies in the cellulosic and advanced spaces where billions of dollars have been invested in research and development, testing, and commercialization of an entire industry that did not exist in 2007. Today, the industry is putting steel in the ground on multiple commercial facilities led by companies including INEOS Bio in Vero Beach, Florida; KiOR in Columbus, Mississippi; Abengoa in Hugoton, Kansas; POET-DSM in Emmetsburg, Iowa; and DuPont in Nevada, Iowa. Additionally, the industry has filed over 30 pathway reviews ongoing at EPA, and just about 1/3 of those have been approved. To ensure that blends above E10 are available for use, the industry sought and received approval of E15, after completion of some of the most extensive testing ever conducted with a fuel approved in the United States. Automakers are also rising to the challenge and have sold more than 8 million flex-fuel vehicles, capable of using E85 wherever it is sold.

In contrast, the oil industry has sought to halt the advancement of renewable fuel every step of the way since 2007. The industry has steadfastly slowed the installation of low-cost infrastructure to make higher blends of renewable fuel available to consumers at the pump. It has discouraged station owners from implementing these changes on their own. It has intervened to mire the regulatory process in legal paralysis. It has perpetuated myths regarding E15 based on faulty, industry-funded studies, ignoring the reality that higher blends of ethanol like E20 are in use throughout the world today.

The so-called blend wall is a fabrication of the oil industry which is seeking to erect as many hurdles as possible to the transformation of America's transportation fuel supply envisioned by the RFS. The unreality of the so-called "blend wall" should be abundantly clear. Higher fuel blends are approved for use and vehicles are on the road, waiting for the opportunity to use these products. Yet, fuels like E15 and E85 are not yet widely available due to failure to act and obstructionist tactics by the oil industry. Next generation alternatives are on the cusp of commercialization, dependent on private investment that requires policy stability to remain committed – policy stability that the oil sector is seeking to undermine by openly advocating for repeal of the policy.

A bipartisan Congress foresaw the challenges of breaking oil's monopoly on our transportation fuel when it adopted the RFS in 2007 and knew that the policy would drive change. Now is the time to stay the course and ensure that both ends of the private sector live up to their ends of the bargain, make the vision of the RFS a reality and bring affordable, clean and renewable fuel to consumers. We look forward to working with you in the coming year to ensure that the RFS remains intact.

Sincerely,



Archer Daniels Midland Company



Comments of the Advanced Biofuels Association

RENEWABLE FUEL STANDARD ASSESSMENT WHITE PAPER
Blend Wall/ Fuel Compatibility Issues

Committee on Energy and Commerce
United States House of Representatives
April 5, 2013

Executive summary

On behalf of the Advanced Biofuels Association (ABFA), a collection of over 40 member companies who produce advanced biofuels and biofuels feedstocks, we welcome the opportunity to comment on the Blend Wall and Fuel Compatibility Issues under the Renewable Fuels Standard (RFS2) program "white paper" posted by the Energy and Commerce Committee. As an Association we have appreciated the Committee's support and attention to the RFS2.

The request by the Committee is focused on exploring the blend wall and issues surrounding mid-level ethanol blends. The corn ethanol associations are best suited to respond to these points. ABFA's response is targeted to the advanced and cellulosic biofuels industry. Therefore we focused our efforts on the original purpose of the 2007 amendments to encourage the development of an advanced biofuels and cellulosic industry, as well as update the Committee on their current state of development.

Responding to the Committee's question whether EPA has sufficient authority to deal with the issues surrounding the blend wall, our answer is 'yes'. We believe EPA is able to make the necessary adjustments to the RFS based on the current authorizations. We seek to familiarize the Committee with the current ability of the advanced biofuels companies to meet and exceed the targets in the biomass based diesel and advanced pools this year. Explanatory charts are provided in Appendix C. Critical to this point is the importance of the energy density and equivalency calculations as well as the practice effect of the nesting of the pools in the RFS. Finally we remind the Committee of the investments made to date and how changing the rules in the middle of the game would be extremely damaging to the private sector.

This document attempts to balance competing voices and to provide a substantive, data-driven response to your questions.

Response

On behalf of the Advanced Biofuels Association (ABFA), a collection of over 40 member companies who produce advanced biofuels and biofuels feedstocks, we welcome the opportunity to comment on the Blend Wall and Fuel Compatibility Issues under the RFS2 program "white paper" posted by the Energy and Commerce Committee. As an Association we have appreciated the Committee's support and attention to the Renewable Fuels Standard program. For more information about ABFA and a map of our member's locations, see Appendix D.

In the current debate over the blend wall and RIN prices we seem to have lost sight of the intent of the RFS2 amendments to create an advanced and cellulosic biofuels industry. This debate should not only be about midlevel ethanol blends but about the future of the entire biofuels industry.

In testimony before the Subcommittee on Energy and Power last July, the ABFA noted that the advanced biofuels industry continues to make significant progress in commercial deployment. Last November one of our members delivered the first cellulosic renewable diesel into the commercial sector thereby receiving RINs on the EPA system. That same company, Kior, also produced the first cellulosic drop-in gasoline which will provide obligated parties with compliant RINs. In addition, a number of other members who are currently producing gallons of advanced biofuels which can be used by obligated parties to meet their requirements under the RFS2 program. These gallons are significant and will immediately assist in attaining the proposed Renewable Volume Obligation (RVO) volume requirements in 2013 without regard to the blend wall.

You requested comments on the history and focus of the effort to amend the RFS in 2007. For almost thirty years Congress enacted pieces of legislation including RFS2 intended to create a corn ethanol industry. It has been a success with nearly 15 billion gallons of standing capacity built to date. The enactment of EISA and the provisions which amended the RFS were intended to stimulate and build an advanced biofuels industry moving well past corn ethanol to fuels with greater greenhouse gas reduction and full compatibility with existing fuel infrastructure. That is one reason why the statute specifically focused on greenhouse gas reduction and created three specific pools to address different types of advanced biofuels (See appendix A.) This effort, for the first time, created a 21 billion gallon target for advanced biofuels. The provisions creating the cellulosic pool specifically provided an actual floor price to encourage the development of these lower-carbon emitting fuels. In addition the EPA rules also specifically rewarded energy density as part of the criteria which RIN credits are awarded. Other advanced biofuel pools recognized the opportunity to create "drop in" fuels (hydrocarbon based fuels essentially the same as those from petroleum) such as renewable diesel, gasoline, heating oil, and jet fuels.

We would like to suggest the Committee consider the entirety of the RFS options and the full range of fuels available to meet the requirements of the statute in your deliberations. In just four short years since EPA's promulgation of the implementation rules we are seeing a wide range of facilities springing up all over the country who make advanced biofuels that generate RINs which obligated parties can utilize to meet their obligations, easing the blend-wall issue. Many of these fuels have no blend wall restrictions and in fact can be utilized as neat, drop-in fuels. Some are diesel fuels and do not require a drop of gasoline in which to be blended. Many of these advanced biofuels due to their energy density have significant multipliers (1.5 or 1.7 time the volume produced) in terms of RIN generation. These gallons count towards the overall targets in the advanced pools and count in the renewable pool, providing an economic option for the obligated parties in terms of meeting their compliance targets. Even in the case of cellulosic ethanol an obligated party who chooses to purchase a gallon is allowed to count that gallon in cellulosic pool, the advanced pool, as well as the renewable pool. "Three for the price of one so to speak."

A significant number of your questions focus on ethanol, specifically the level of corn ethanol utilized in the renewable pool. There are three industry associations that exclusively promote ethanol have been the petitioners of the E-15 waiver requested and have funded research and development of these blends. Given their expertise we will not attempt to address these issues in our comments.

We will focus our attention on the advanced biofuels sector and its ability to meet and exceed the requirements of the RFS for the biomass-based diesel pool as well as the advanced pool. The RFS mandates three pools in the advanced biofuels sector: 1) advanced, 2) biomass-based diesel, and 3) cellulosic. As discussed in detail in Appendix C, estimated 2013 production of advanced biofuels sector is significant and we believe will exceed the required mandated gallons. In doing so, we believe advanced biofuels sector producers will help to alleviate many of the current concerns surrounding the "blend wall".

The Committee's white paper correctly asserts that the amount of gasoline currently being utilized in the United States has fallen since the RFS2 was signed into law. In fact a number of analytic services including the Energy Information Agency are predicting this trend will continue over the next twenty years and be exacerbated by new CAFE standards. Despite this, the petroleum refining industry is actively discussing the desire to expand their existing manufacturing capacity in the United States. With the advent of new crude oil and gas liquid discoveries from shale exploration the refiners have encountered an increase in domestic feedstocks. This is lowering the crude spreads in terms of price between the various varieties of crude oil, with more reductions predicted in the future. This helps the margins and goes straight to the bottom line for a number of refiners. Further, some of these new crudes are less sulfur intense and could extend the life of refineries once considered out-of-business due to their lack of upgrading capacity. At a recent refining conference in San Antonio, the discussion focused on debottlenecking distribution routes for all this new found crude to various refining locations in our nation with the intention of building one of the most efficient and competitive product export systems in the world. We note in context that this not exactly a picture of an industry reeling from the impacts of the RFS2. Additionally, advanced biofuels oils (similar to petroleum crudes) are coming online and will further support the growth of the US refining industry by adding throughput to the existing base which complies with the RFS.

Q 8: Can the blend wall implementation challenges be avoided without changes to the RFS? Is the existing EPA Waiver process sufficient to address any concerns? If the RFS must be changed to avoid the blend wall, what should these changes entail? Should any changes include liability relief or additional consumer protections from addressing misfueling concerns?

A: Yes, the blend wall implementation challenge can be avoided in 2013 without changes to the RFS. Each year under the RFS statute the EPA is called upon to set the RVO for the coming year. The statute was intended to grant EPA the flexibility to utilize this process to adjust the size of the various pools in conjunction with the relative ability of the marketplace to meet the original targets. The recent federal district court case validated this view in finding that EPA could not "put its thumb on the scale" by setting the size of the cellulosic pool (See appendix B). In that same case the court made it absolutely clear EPA can grant cellulosic gallons above the cellulosic requirement to be included in the advanced pool requirement so long as gallons are

reasonably available. The court determined that EPA is within its authority to continue such practice, as have they have done since 2010. It should be noted that as a result of the performance of the biomass-based diesel pool that EPA raised the volume number to 1.28 billion for 2013. Once again estimates suggest the industry will exceed the new level of 1.28 billion gallons in this calendar year.

On two occasions the EPA was petitioned by appropriate stakeholders who argued economic harm to their citizens as a result of the EPA RVO mandates. In both instances the EPA did not find sufficient economic burden to grant the waiver. The clear intention of Congress in writing the provisions, which required an annual setting of the RVO obligations, was to make sure the mandates and the markets were in line with each other and did not create undue economic impacts on the nation. Combined with the recent federal court opinion it is clear that EPA possess the ability to adjust the RVO pools as a result of changes in the size of various demand functions in the market place. RINs generated by advanced biofuels can help obligated parties avoid the blend wall. Therefore between the RVO process and comment period, the experience to date with the waiver process, and the recent court decision, we believe the EPA does have sufficient authority to address blend wall concerns should they exist. The flexibility Congress built into the RFS has worked and should allow EPA to continue to make the necessary adjustments to address acute market perturbations.

We believe when one views the RFS across the entire set of pools and takes into consideration the current biofuel production rates, energy density multipliers and nesting components of the various pools, the need to change the existing RVO's will not be required in 2013.

Regarding the liability relief question, if Congress grants liability protection to mid-level ethanol blends, they should grant the same protection to other advanced biofuels so as not to pick a particular molecule winner. Fuels such as isobutanol and hydrocarbon molecules from renewable feedstocks must be afforded a level playing field with ethanol if we are to reach the goals of the RFS2.

Q 10: What other methods, including the use of drop-fuels, are available to industry to ease the challenge posed by the blend wall?

Given the interest in the increase in the ethanol RIN values we would like to make the following observations:

First, the RIN market has been thinly capitalized in terms of the number of available RINs for purchase from buyers. Therefore during the recent run up of price, it did not require large volume purchases to make significant increases or decreases in RIN value. When EPA originally took comments on the regulatory framework in 2009 and 2010, they asked whether companies who were not part of the physical commodity industry involved in the trade could participate. ABFA suggested on the record it should not allow speculators and only allow those involved in the physical trade. We believe this approach could be revisited moving forward.

A second point for consideration is the fact that when the “renewable” pool RIN increased in value, other advanced biofuels such as diesel were economically able to compete for sale in as a

renewable RIN. We have already seen significant forward transactions by obligated parties in this regard. As renewable diesel does not need anything to blend into, the value of these gallons is significant, and they also receive a 1.7 to 1 RIN multiplier due to their high energy density. Therefore a million gallons purchase would represent 1.7 million gallons of RINs for compliance purposes. The same can be said for excess gallons utilized in the biomass based diesel pool and the advanced pool as they are all nested within the “renewable” pool mandated numbers.

A: We have provided two sets of potential compliance routes for your consideration. (See Appendix C.)

Q 11: What are the impacts on renewable fuels producers if the RFS is changed to avoid the blend wall?

A: A number of stakeholder groups are attempting to create a view that the RFS is broken and should be wholesale repealed rather than allowing EPA to utilize their authority to make any required adjustments. That would be a step backward in America's energy future. Right now, many of the advanced and cellulosic companies are seeking to break ground or attempting to raise funds to build their first plants. This entire discussion has had a negative impact on these businesses and their financial community. For companies who cannot self-finance this is a heavy burden making commercial deployment difficult, thereby halting the addition of new RINs which the obligated parties could utilize. Already many companies have made significant investments and have broken ground to build new plants. Many of these are operating, or will come online in the next couple of years. The conversation as to whether to change the rules in the middle of the game is not equitable to those who played by the rules. This effort will wind up costing material capital investment to the investors who complied with the vision of the RFS as drawn up by Congress, particularly for the advanced biofuels sector. Congress' vision in creating RFS2 was to surpass the Energy Policy Act of 2005 to stimulate the creation of an advanced biofuels industry that would deliver larger greenhouse gas reduction, higher energy density renewable fuels, and “drop-in” fuel molecules that are totally compatible with our existing engines, pipeline system and fuel pumps. We continue to believe that the vision to create a diverse set of options for America's transportation fuels sector was a wise one. Advanced and cellulosic companies have broken ground and are moving forward with that vision. This is a time to stay the course and allow EPA to utilize its authority, when merited, to make the necessary adjustments to keep a sound program on solid footing and on a sustained path forward.

Submitted by:

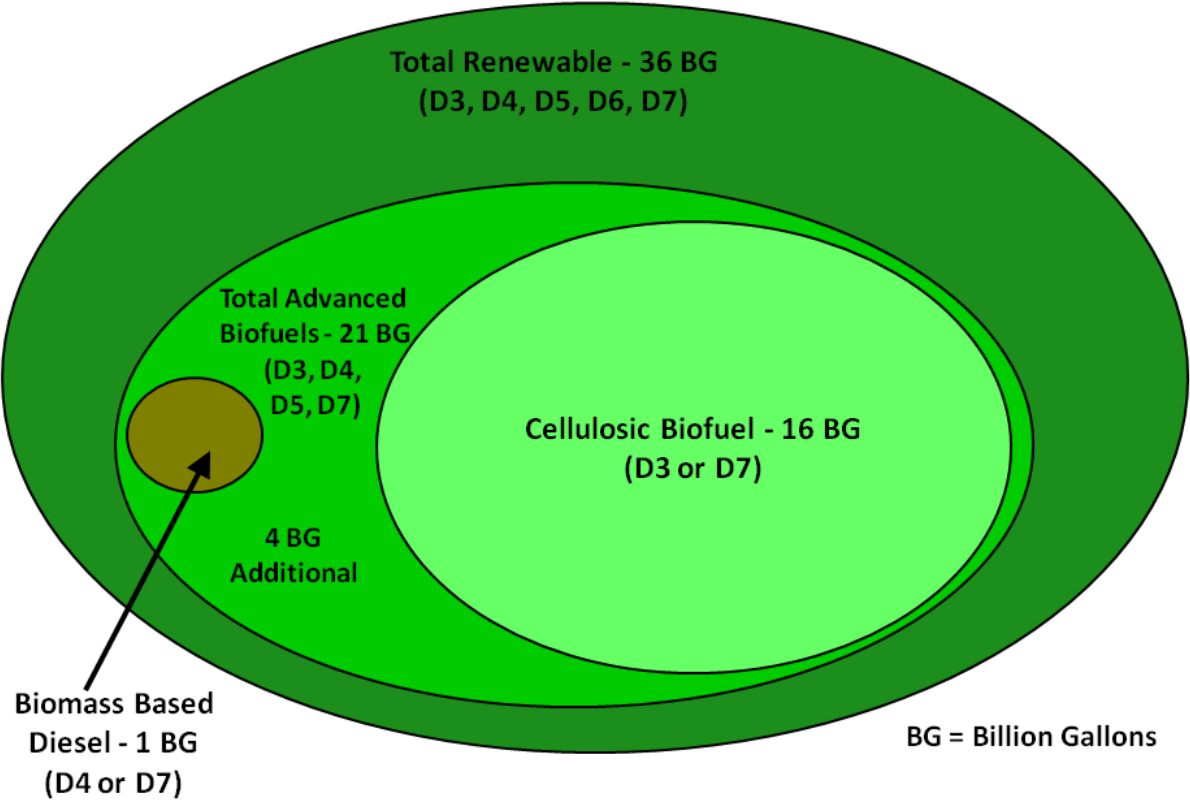
Michael McAdams

President
Advanced Biofuels Association

800 17th Street, NW • Suite 1100 • Washington, DC 20006
T: 202.469.5140
F: 202.955.5564
E: michael.mcadams@hklaw.com
W: advancedbiofuelsassociation.com

Appendix A

Renewable Fuel Standard RFS2 in 2022



Appendix B

USCA Case #12-1139 Document #1417101 Filed: 01/25/2013 Page 1 of 14

United States Court of Appeals FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued December 10, 2012 Decided January 25, 2013

No. 12-1139

AMERICAN PETROLEUM INSTITUTE,
PETITIONER

v.

ENVIRONMENTAL PROTECTION AGENCY,
RESPONDENT

ADVANCED BIOFUELS ASSOCIATION, ET AL.,
INTERVENORS

On Petition for Review of Final Agency Action of the United
States Environmental Protection Agency

Robert A. Long, Jr. argued the cause for petitioner.
With him on the brief were *Kristen E. Eichensehr* and *Harry
M. Ng*.

Daniel R. Dertke, Attorney, U.S. Department of
Justice, argued the cause and filed the brief for respondent.

John C. O'Quinn, *William H. Burgess*, *Sandra P.
Franco*, *David B. Salmons*, and *Bryan M. Killian* were on the
brief for intervenors.

Before: BROWN and KAVANAUGH, *Circuit Judges*, and
WILLIAMS, *Senior Circuit Judge*.

Opinion for the Court filed by *Senior Circuit Judge*
WILLIAMS.

WILLIAMS, *Senior Circuit Judge*: This case arises out of Congress's command that the Environmental Protection Agency make predictions about a promising technology. While the program *as a whole* is plainly intended to promote that technology, we are not convinced that Congress meant for EPA to let that intent color its work as a predictor, to let the wish be father to the thought.

In 2005 and again in 2007, Congress amended the Clean Air Act ("Act") to establish a renewable fuel standard ("RFS") program, now codified at 42 U.S.C. § 7545(o). See Energy Policy Act of 2005, Pub. L. No. 109-58; Energy Independence and Security Act of 2007, Pub. L. No. 110-140. Under the RFS program, EPA must promulgate regulations to ensure that transportation fuel sold or introduced into commerce (hereafter collectively, "sold") in the 48 contiguous U.S. states contains an increasing measure of renewable fuel through 2022. See generally 42 U.S.C. § 7545(o)(2). The Act enumerates yearly "applicable volume" requirements not only for renewable fuel but also for a subclass known as "advanced biofuels," which produce lower greenhouse gas emissions than conventional renewable fuels such as corn-based ethanol. *Id.* §§ 7545(o)(1)(B) (definition of advanced biofuel), 7545(o)(2)(B) (applicable volumes). The "applicable volume" for a particular fuel (a phrase used repeatedly in the statute and thus in this opinion) determines how much of that fuel refiners, importers and blenders must purchase each year in order to comply with the RFS program. *Id.* § 7545(o)(3)(B).

In establishing the RFS program, Congress made commercial production of cellulosic biofuel, an advanced biofuel derived from sources of lignocellulose such as switchgrass and agricultural wastes, central to the program's objective of reducing greenhouse gas emissions. Subject to the EPA adjustments that are the subject of this case, the Act requires that more than three quarters of advanced biofuel sold in the United States after January 1, 2022 be cellulosic biofuel. *Id.* § 7545(o)(2)(B)(i)(III). These standards for cellulosic biofuel assumed significant innovation in the industry. When Congress introduced the cellulosic biofuel requirement in 2007, there was no commercial-scale production at all. Yet Congress mandated cellulosic biofuel sales in the U.S. of 100 million gallons in 2010, 250 million in 2011, and half a billion in 2012 (all in ethanol-equivalent gallons). *Id.*; see also *Regulation of Fuels and Fuel Additives: 2012 Renewable Fuel Standards*, 77 Fed. Reg. 1,320, 1,325 (Table II.A-1), 1,330-31 (Table II-B.6-1) (Jan. 9, 2012).

Recognizing the technological challenges, Congress provided for the possibility that actual production would fall short of the stated requirements. Section 7545(o)(7)(D)(i) calls for a determination by EPA of the "projected volume of cellulosic biofuel production" for each calendar year, to be made no later than November 30 of the prior year and to be "based on" an estimate of the Energy Information Administration ("EIA"). When that projection is less than the mandated volume, the Administrator is to "reduce the applicable volume of cellulosic biofuel . . . to the projected volume." *Id.* §§ 7545(o)(3)(B), 7545(o)(7)(D)(i). The Act also provides that in the event of such a reduction the Administrator "may also reduce the applicable volume of renewable fuel and advanced biofuels" required for that year. *Id.* § 7545(o)(7)(D)(i).

In a January 2012 Final Rule (the “2012 RFS rule”), EPA projected that 8.65 million gallons of cellulosic biofuel (10.45 million ethanol-equivalent gallons) would be produced in 2012, well short of the 500 million ethanol-equivalent gallons mandated by the Act for that year. See *Regulation of Fuels and Fuel Additives: 2012 Renewable Fuel Standards*, 77 Fed. Reg. at 1,324-31. In the same rule, EPA considered but rejected a reduction in the volume of total advanced biofuels required for 2012, stating that other kinds of advanced biofuels could make up for the shortfall. *Id.* at 1,331-37.

Petitioner American Petroleum Institute (“API”) objects both to EPA’s 2012 projection for cellulosic biofuel and to its refusal to reduce the applicable advanced biofuels volume for 2012. We reject API’s argument that EPA failed to justify its determination not to reduce the applicable advanced biofuels volume for 2012. But we agree with API that because EPA’s methodology for making its cellulosic biofuel projection did not take neutral aim at accuracy, it was an unreasonable exercise of agency discretion.

* * *

Timeliness of API’s petition. Before turning to the merits we address a claim raised by a coalition of intervenors representing the biofuel industry. They argue that API is jurisdictionally barred from challenging the 2012 RFS rule because that rule merely perpetuates an approach that EPA first employed a year earlier in its projection of cellulosic biofuel volumes for 2011. Had API wanted to challenge the methodology employed in the 2012 RFS rule, intervenors contend, it should have filed suit within 42 U.S.C. § 7607(b)’s 60-day time limit after Federal Register publication of EPA’s cellulosic biofuel projection for 2011. In support of this claim, they point to our decision in *Medical Waste Institute v. EPA*, 645 F.3d 420, 427 (D.C. Cir. 2011), in which we

declined to consider a challenge to a rule because the petitioner had not sought judicial review when the agency had “first use[d]” the approach that rule reflected.

Intervenors’ invocation of *Medical Waste* is inapt. Here, unlike in *Medical Waste*, the petitioner attacks a methodology used for *prediction*, which can look more arbitrary the longer it is applied. The reasonableness of adopting a predictive methodology is not the same as the reasonableness of *maintaining* one in the face of experience; considering whether to maintain a methodology necessarily invites reflection on the success of earlier applications. API’s challenge to the 2012 RFS rule rests significantly on the complete failure of EPA’s prediction for 2011: 6.6 million gallons, as against zero in reality. See *Regulation of Fuels and Fuel Additives: 2011 Renewable Fuel Standards*, 75 Fed. Reg. 76,790, 76,793 (Dec. 9, 2010); EPA, *Fuels and Fuel Additives, 2011 RFS2 Data*, <http://www.epa.gov/otaq/fuels/rfsdata/2011emts.htm>. We agree with API that the 2011 failure colors the rationality of EPA’s decision to persist in 2012 and sheds light on the weight EPA gave to specific aspects of its approach. Accordingly we find API’s petition timely.

Cellulosic biofuel projection. Section 7545(o)(7)(D)(i) of the Act states that an annual “projected volume of cellulosic biofuel production” will be “determined by the Administrator,” which determination is to be “based on” EIA’s estimate. 42 U.S.C. §§ 7545(o)(3)(B), 7545(o)(7)(D)(i). In the 2012 RFS rule, EPA explained that its projection of 8.65 million gallons of cellulosic biofuel was “based on several sources of information”: (1) EIA’s projection of 6.9 million gallons for 2012; (2) “Progress that the cellulosic biofuel industry is making”; (3) the agency’s “own assessment of the cellulosic biofuel industry’s projected volumes” for 2012; and (4) comments on a draft version of the

rule. 77 Fed. Reg. at 1,324, 1,328. The rule further stated that EPA's projection was "very similar" to EIA's, and that the two agencies' figures were derived from the same set of cellulosic biofuel production facilities. *Id.* at 1,329. EPA attributed its higher results to "slight variations [that] are a result of different methodologies." *Id.* The most important of these variations related to timing: EIA assumed a "standard utilization factor" of 25 percent of full-capacity production (which EIA applies to all commercial-scale facilities in their first year of production), whereas EPA looked to the start-up dates of the facilities as anticipated by the facilities' owners. *Id.* EPA also disagreed with EIA's assessment of the production capacities of two facilities, and with its application of a ten percent utilization factor to a "pilot plant," which EPA judged likely to produce fuel on a commercial scale rather than (as EIA expected) an experimental one. *Id.*

This exposition suggests little more than a technocratic exercise of agency discretion. Yet elsewhere in the rule EPA expressed a decidedly non-technocratic bent. In a response to comments submitted by API and others, EPA observed that "[i]n directing EPA to project cellulosic biofuel production for purposes of setting the annual cellulosic biofuel standard, Congress did not specify what degree of certainty should be reflected in the projections." *Id.* at 1,325. It went on:

While the cellulosic biofuel standard that we set should be within the range of what can be attained based on projected domestic production and import potential, the standard that we set helps drive the production of volumes that will be made available. . . . Thus while any standard we set for cellulosic biofuel standard for 2012 will have some uncertainty in terms of actual attainment, *our intention is to balance such uncertainty with the objective of promoting growth in the industry.* Our

final projected available volume . . . for 2012 reflects these considerations.

Id. (emphasis added). The agency went on to state its concern that setting 2012 cellulosic biofuel production figures “at the low end of the proposed range, or some lower volume, could potentially result in a depressed market for cellulosic biofuel.” *Id.* at 1,330. The figures the agency chose, by contrast, would “provide the appropriate economic conditions for the cellulosic biofuel industry to grow.” *Id.*

In comments to EPA and before us, API offers several broad critiques of the agency’s cellulosic biofuel projection for 2012. First, API argues that EPA did not base its projection on EIA’s estimate, but rather used a “supplementary analysis” that “effectively supplanted” EIA’s prediction. Pet’r Br. 27-28 (quoting *Sierra Club v. EPA*, 356 F.3d 296, 306 (D.C. Cir. 2004)). The table below expresses the divergence:

8

Cellulosic biofuel production, 2010-2012 (millions of gallons)¹

	2010	2011	2012
EIA Projected	5.0	3.9	6.9
EPA Projected	5.0	6.6	8.7
Actual	0	0	

Putting aside EPA's deliberate choice of a non-neutral purpose, discussed below, and deviations from the EIA estimates that seem likely to have been a product of that choice, we aren't persuaded that there is any illegality in EPA's treatment of EIA's work. The statute called first for EIA to supply an estimate of the amount of cellulosic biofuel to be sold, 42 U.S.C. § 7545(o)(3)(A), then for EPA to "determine" the obligation "based on" that estimate, *id.* § 7545(o)(3)(B). Plainly Congress didn't contemplate slavish adherence by EPA to the EIA estimate; had it so intended, it could have skipped the EPA "determination" altogether. We think EPA was entitled under *Chevron USA, Inc. v. Natural*

¹ Source: *Regulation of Fuels and Fuel Additives: 2012 Renewable Fuel Standards*, 77 Fed. Reg. 1,320, 1,325-30 (Jan. 9, 2012); *Regulation of Fuels and Fuel Additives: 2011 Renewable Fuel Standards*, 75 Fed. Reg. 76,790, 76,793-97 (Dec. 9, 2010); *Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program*, 75 Fed. Reg. 14,670, 14,748-49, 51 (Mar. 26, 2010); EPA, *Fuels and Fuel Additives, 2011 RFS2 Data*, <http://www.epa.gov/otaq/fuels/rfsdata/2011emts.htm>; EPA, *Fuels and Fuel Additives, 2010 RFS2 Data*, <http://www.epa.gov/otaq/fuels/rfsdata/2010emts.htm>.

Resources Defense Council, Inc., 467 U.S. 837 (1984), to read the phrase “based on” as requiring great respect but allowing deviation consistent with that respect.

Second, API claims that EPA’s projection derived from a methodology biased towards overstatement, inasmuch as it relied largely on statements from cellulosic biofuel facility owners, who in 2011 predicted significant production and yet generated no fuel at all. Joint Appendix 100; Pet’r Br. at 33-35. But the producers were not only an almost inevitable source of information but were also a principal source of EIA’s estimates; at least if EPA regarded that information with suitable caution, we can hardly fault it for following EIA’s lead.

Finally, API challenges the special tilt with which EPA expressly viewed the data—a tilt, in its words, toward “promoting growth” in the cellulosic biofuel industry. We agree with API that such a purpose has no basis in the relevant text of the Act.

EPA is correct that one of Congress’s stated purposes in establishing the current RFS program was to “increase the production of clean renewable fuels.” See Pub. L. No. 110-140, 121 Stat. 1492, 1492 (2007). But that general mandate does not mean that every constitutive element of the RFS program should be understood to individually advance a technology-forcing agenda, at least where the text does not support such a reading. As we observed in *American Petroleum Institute v. EPA*, 52 F.3d 1113, 1119 (D.C. Cir. 1995), “EPA cannot rely on its general authority to make rules necessary to carry out its functions when a specific statutory directive defines the relevant functions of EPA in a particular area.” Although here EPA invokes not its general rulemaking authority, but rather the general purpose of the RFS program,

we think the same principle applies: a broad programmatic objective cannot trump specific instructions.

We do not think the text of § 7545(o)(7)(D)(i) or the general structure of the RFS program supports EPA's decision to adopt a methodology in which the risk of overestimation is set deliberately to outweigh the risk of underestimation.² Section 7545(o)(7)(D)(i)'s reference to the "projected volume of cellulosic biofuel" seems plainly to call for a prediction of what will *actually* happen. EPA points to no instance in which the term "projected" is used to allow the projector to let its aspirations for a self-fulfilling prophecy divert it from a neutral methodology.

In fact, the general structure of the RFS program militates against such a conclusion. Section 7545(o)(7)(D)(i) serves as a non-discretionary safety valve when the refiners and importers of transportation fuel subject to § 7545(o)'s mandate would otherwise be put in an impossible position, or at least a highly punitive one—that is, forced to purchase volumes of cellulosic biofuel greater than total production, or pay fines for failing to do so. Only with regard to cellulosic biofuel did Congress adopt so cautious an approach—perhaps because of the industry's embryonic character. The only other fuel-specific waiver provision in the RFS Program is for biomass-based diesel; but that waiver authorizes no more than a fifteen percent reduction in applicable volumes, does not require EPA to project available fuel, and is tied to price spikes, not production volumes. See 42 U.S.C. § 7545(o)(7)(E)(ii). In other words, only with respect to

² More precisely, a methodology that *plans* for the expected value of upside errors (the summation of each upside deviation, weighted by its likelihood) to exceed the expected value of downside errors.

cellulosic biofuel did Congress evince a clear concern for production shortfalls.

Viewed in this light, the most natural reading of the provision is to call for a projection that aims at accuracy, not at deliberately indulging a greater risk of overshooting than undershooting. Although as EPA notes the Act allows an obligated entity to carry over a deficit in renewable fuel purchases into the following year, see 42 U.S.C. § 7545(o)(5)(D); 40 C.F.R. § 80.1427(b)(1), that simply makes the controlling unit of time two years rather than one—hardly long enough to sharply reduce the risk of a penalty. As reflected in the chart, *supra* at 8, history suggests the opposite conclusion: a refiner forced to carry a deficit in 2010, when EPA projected five million gallons of cellulosic biofuel yet none was produced, would not have found relief in 2011, when the agency predicted 6.6 million and actual production was again zero.

Further, the Act's requirement that EPA's projection be "based on" EIA's estimate similarly implicates an outcome-neutral methodology over an aspirational one. Though we above rejected API's advocacy of apparently near carbon-copy reliance on EIA, EPA's effort to kickstart cellulosic biofuel production does not look like the sort of "supplemental analysis" in pursuit of the same regulatory objective that we found permissible in *Sierra Club*, 356 F.3d at 306 n.7, but rather like the adoption of an entirely new goal.

Our prior decisions relating to technology-forcing standards are no bar to this conclusion. We recognize here, as we have recognized in the past, that an agency may base a standard or mandate on future technology when there exists a rational connection between the regulatory target and the presumed innovation. In *National Petrochemical & Refiners Ass'n v. EPA*, 287 F.3d 1130 (D.C. Cir. 2002), for example,

we upheld EPA's adoption of a technology-forcing standard for diesel engines on the reasoning that "[i]n the absence of theoretical objections to the technology, the agency need only identify the major steps necessary for development of the device, and give plausible reasons for its belief that the industry will be able to solve those problems in the time remaining." *Id.* at 1144 (quoting *Natural Resources Defense Council v. EPA*, 655 F.2d 318, 333 (D.C. Cir. 1981)). We invoked similar principles in rejecting challenges to emissions standards in *Natural Resources Defense Council v. Thomas*, 805 F.2d 410, 428-430 (D.C. Cir. 1986), and *Sierra Club v. Costle*, 657 F.2d 298, 364 (D.C. Cir. 1981).

In all these cases, government pressure joined forces with industry specialization and competence. Here, by contrast, EPA applies the pressure to one industry (the refiners), see *Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program*, 75 Fed. Reg. 14,670, 14,731 (Mar. 26, 2010); see also 42 U.S.C. § 7545(d)(1); 40 C.F.R. § 80.1463, yet it is another (the producers of cellulosic biofuel) that enjoys the requisite expertise, plant, capital and ultimate opportunity for profit. Apart from their role as captive consumers, the refiners are in no position to ensure, or even contribute to, growth in the cellulosic biofuel industry. "Do a good job, cellulosic fuel producers. If you fail, we'll fine your customers." Given this asymmetry in incentives, EPA's projection is not "technology-forcing" in the same sense as other innovation-minded regulations that we have upheld.

Although an agency may flesh out the interstices of a technical regime, *Catawba Cnty. v. EPA*, 571 F.3d 20, 36-38 (D.C. Cir. 2009), that discretion does not entitle the agency to arrogate to itself purposes outside the statutory provision it is applying. See also *Railway Labor Executives' Ass'n v. Nat'l Mediation Bd.*, 29 F.3d 655, 671 (D.C. Cir. 1994) ("Were

courts to *presume* a delegation of power absent an express *withholding* of such power, agencies would enjoy virtually limitless hegemony”). Yet that is precisely what EPA appears to have done in projecting cellulosic biofuel production for 2012.

Advanced biofuels volume. Section 7545(o)(7)(D)(i) states that in any year where EPA reduces the applicable volume of cellulosic biofuel, “the Administrator *may* also reduce the applicable volume of renewable fuel and advanced biofuels.” 42 U.S.C. § 7545(o)(7)(D)(i) (emphasis added). In the 2012 RFS rule, EPA concluded that other sources of advanced biofuels, in particular imported sugarcane ethanol and biomass-based diesel, could make up for the 490 million gallon shortfall in cellulosic biofuel it had projected for 2012. 77 Fed. Reg. at 1,331-37. The agency accordingly declined to reduce the applicable volume of advanced biofuels. *Id.* EPA, however, did not specify precisely how much sugarcane ethanol or biomass-based diesel it thought would be available, nor did it indicate in what combination these two sources would amount to 490 million gallons. API asserts that this failure to provide numerical projections “reveals the arbitrary nature” of EPA’s findings and “violates the agency’s duty to provide a reasoned explanation for its decisions.” Pet’r Br. at 45.

We find these arguments unpersuasive. Nothing in the text of § 7545(o)(7)(D)(i), or any other applicable provision of the Act, plainly requires EPA to support its decision not to reduce the applicable volume of advanced biofuels with specific numerical projections. This stands in contrast to the Act’s explicit instruction that EPA make a numerical projection for cellulosic biofuel. Certainly EPA must provide a reasoned explanation for its actions, but rationality does not always imply a high degree of quantitative specificity.

Turning to the explanation that EPA did provide, we think EPA has “articulate[d] a satisfactory explanation for its action including a rational connection between the facts found and the choice made.” *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quotations removed). The agency adequately grounded its determination in historical data on sugarcane ethanol imports and biodiesel production, as well as governmental and non-governmental projections for future production of those fuels. See 77 Fed. Reg. at 1,331-37. We find especially relevant EIA’s projection of 300 million gallons of sugarcane ethanol imports for 2012 and EPA’s estimation of 2.4 billion gallons in U.S. biodiesel production capacity. See *id.* at 1,332, 1,334. These data plausibly suggest that some combination of the two sources of advanced biofuels will be available to make up for the shortfall in cellulosic biofuel. Moreover, in sharp distinction with cellulosic biofuel, there appears to be no great obstacle to the *production* of advanced biofuel generally; to the extent that estimates in the record are relatively low, that seems to be based on want of a market, which of course continued pressure will tend to solve. *Id.* at 1,334-35.

* * *

For the reasons set out above, we reject API’s challenge to EPA’s refusal to lower the applicable volume of advanced biofuels for 2012. However, we agree with API that EPA’s 2012 projection of cellulosic biofuel production was in excess of the agency’s statutory authority. We accordingly vacate that aspect of the 2012 RFS rule and remand for further proceedings consistent with this opinion.

So ordered.

Appendix C

RFS2 in 2013

Proposed RVOs for 2013 (in billions of gallons)		Factors impacting compliance
Total renewable:	16.55	<ul style="list-style-type: none">Estimated number of carry-over RINS from 2012: 2.6 bilProjected biodiesel production capacity for 2013: 1.6 bil gal x 1.5 energy density = 2.4 bil gal/yrProjected gasoline consumption in 2013 by EIA: 133.524 bil gal
Conventional (corn)	13.80	
Cellulosic:	0.014	
Biomass-based diesel:	1.280	
Advanced:	2.750	

Meeting 2013 RVOs

EPA's View (in billions of RINs)		ABFA's view (in billions of RINs)	
Total projected supply:	16.55	Total projected supply:	18.849
Ethanol*:	13.35	Ethanol*:	13.35
Cellulosic:	0.014	Cellulosic:	0.009
Biomass-based diesel†:	1.920	Biodiesel†:	2.400
"Other" advanced†:	0.150	Renewable diesel†:	0.340
Gap:	1.116	"Other" advanced†:	0.150
		Carry-over RINs from 2012:	2.600
		Surplus:	2.299

* Based on 10% of EIA's projected gasoline consumption for 2013.

† Adjusted on an ethanol gallon basis.

* Based on 10% of EIA's projected gasoline consumption for 2013.

† Adjusted on an ethanol gallon basis.

Appendix D

About the Advanced Biofuels Association

The Advanced Biofuels Association (ABFA) is a national organization representing the new generation of advanced and renewable technologies that will help drive America's new economy by creating jobs, reducing our dependence on foreign oil and fossil fuels while fueling a sustainable future for the world. The ABFA has quickly become a leading voice for America's domestic biofuels industry since it was established in 2009.

With 42 member companies, ABFA is the largest organization representing the advanced biofuels industry. Our members are developing and commercializing a wide range of technologies, feedstocks, and molecules to produce renewable, lower carbon fuels that will move our nation closer to achieving energy and economic security. The ABFA supports policies that are technology neutral, promote the utilization of sustainable feedstocks and supports subsidy parity to ensure all viable advanced biofuels can compete with the benefit of a level playing field. Using feedstocks, forest trimmings, animal fats and algae, our members are employing a variety of advanced technologies.





April 5, 2013

The Honorable Fred Upton
Chairman, Committee on Energy and Commerce
U.S. House of Representatives

The Honorable Henry Waxman
Ranking Member, Committee on Energy and Commerce
U.S. House of Representatives

**RE: Advanced Ethanol Council Comments on the Renewable Fuel Standard Assessment White Paper:
Blend Wall/Fuel Compatibility Issues**

Dear Chairman Upton and Ranking Member Waxman,

The Advanced Ethanol Council (AEC) appreciates the opportunity to comment on the Renewable Fuel Standard Assessment White Paper: Blend Wall/Fuel Compatibility Issues. The AEC represents worldwide leaders in the effort to develop and commercialize the next generation of ethanol fuels, ranging from cellulosic ethanol made from dedicated energy crops, forest residues and agricultural waste to advanced ethanol made from municipal solid waste, algae and other feedstocks. The AEC is the only advanced biofuel group with the singular purpose of promoting advanced ethanol fuels and technologies.

General Comment on the RFS: As an underlying component of conducting a white paper review of the Renewable Fuel Standard (RFS), it is important to first consider why the Renewable Fuel Standard (RFS) is necessary. If you investigate the history of ethanol use in the United States, it becomes evident that the U.S. liquid fuels industry is not price driven, open or competitive. In a competitive marketplace, if an innovator presents a valuable product for a competitive price, there is a reasonable expectation of demand. This free market principle gives investors a durable benchmark against which to judge the value of their product, which in turn attracts investment to better products. This important market dynamic is largely absent from the global liquid fuels marketplace for a number of reasons, including but not limited to the highly consolidated, vertically integrated characteristics of the oil industry, particularly with regard to wholesale markets, the anti-competitive price distorting behavior of OPEC, and blending constraints such as the blend wall. There is no better example of the consequence of this problem than ethanol, which has generally been offered at a significant discount to gasoline without increased

demand significantly beyond the volume of fuel required for blending by the U.S. government.¹ With specific regard to the advanced biofuels industry, it is important to emphasize that one of the primary problems with a non-competitive marketplace is its failure to properly reward innovation. In other words, if the market does not necessarily demand a better and cheaper product, then there is no impetus to create one (both from within and outside of the fossil fuel sector). This is one of the primary reasons why the United States remains largely dependent on petroleum to meet consumer demand for liquid fuels. It is also the overarching reason why the RFS is necessary. The RFS provides innovators with a predictable (and flexible) expectation for demand in a marketplace that does not properly reward innovation. Most importantly, the RFS is working. The RFS statutory schedule required 15.2 billion gallons of renewable fuel blending in 2012, of which 2 billion were advanced biofuels. The renewable fuels industry met the challenge. Just five years after the enactment of RFS2, the cellulosic biofuels industry is breaking through at commercial scale (see attached: AEC Cellulosic Biofuels Progress Report).² Given the realities of world and domestic liquid fuels markets, the cornerstone of ongoing investment and development in the advanced biofuels sector is the consistent, unchanged and durable administration of the RFS. The alternative to the RFS – or any gallons waived from the RFS – is not innovation in other areas; it is simply more fossil fuels that are increasingly scarce and carbon intensive.

General Comment on the Blend Wall: As discussed, the RFS provides the reasonable expectation of demand that is driving innovation in the biofuels sector. But the policy does not exist in a vacuum. Other variables (e.g. overarching market conditions, tax policy and market constraints) continue to play a critical role in the deployment of the program. The best solution to these problems is to address the problems themselves rather than tear up the progressive policy that is bringing these underlying market and policy failures to the surface. The chief underlying rationale for addressing the problems rather than the RFS is related to cost. While the consumer expense of remaining dependent on oil is immense, the solutions to the blend wall are not. For example, there would be no blend wall if the majority of vehicles in the United States were flex-fuel vehicles (FFVs). The additional manufacturing cost of making a conventional vehicle flex-fuel at the manufacturing plant is roughly \$100 per vehicle. With the predominant penetration of FFVs, ethanol/gasoline blending markets become fungible and marketers/consumers are free to choose higher ethanol blends (or not) based on performance and price. The most efficient way to deploy FFVs is to require them, as proposed by various Open Fuel Standard (OFS) proposals. Requiring FFVs would cost automakers very little – especially given that about 50% of new vehicles are already FFVs – but would have far reaching positive effects on the consumer

¹ Some have argued that this discount reflects the lower energy density of ethanol relative to gasoline. This is a misleading argument, because ethanol also contains much higher octane (with lower toxicity) than gasoline, which puts ethanol in a much more expensive class of premium fuel products that are relied upon to meet the minimum performance and environmental standards for gasoline. It is not a coincidence that the primary alternatives to ethanol for octane trade at prices that often exceed \$5.00 per gallon.

² See AEC Progress report, http://ethanolrfa.3cdn.net/96a2f9e04eb357bbbd_1sm6vadqk.pdf.

marketplace (e.g. increased competition, consumer choice, cheaper fuel, low carbon fuels, etc.). There are two additional advantages of a vehicular FFV requirement: (1) virtually zero cost to the U.S. Treasury; and, (2) market access certainty for advanced ethanol producers and technology developers, who will then have the opportunity to compete based on price in an unconstrained, fungible marketplace. The ethanol industry is also committed to breaking the blend wall in other ways. For example, e15 blends are now certified for use in 2001 model year and later vehicles, which together account for 75% of the miles driven today.³ In addition, e85 blends are becoming increasingly popular given the discount offered by ethanol over gasoline. However, the question then moves to the rate of change in the marketplace. In simple terms, if the production of ethanol outpaces the deployment of ethanol in the marketplace, ethanol markets become over-saturated, ethanol prices drop, innovation is dampened, and the oil industry's control of the marketplace remains. Incumbents in the fuel energy industry understand this market dynamic, which explains why the oil industry has done everything possible to curtail the use of e15, higher ethanol blends, and FFVs. As noted by energy economist Phil Verleger, "[t]he oil industry doesn't like to sell less oil, so they are trying hard to kill the [RFS] program ... so they can sell more gasoline and not have to use as much ethanol."⁴

Response to Specific White Paper Questions

1. To what extent was the blend wall anticipated in the debates over the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007?

Constraints on ethanol blending have been memorialized since at least 1990, when the Clean Air Act Amendments of 1990 promoted but also limited oxygen content (and thereby, ethanol) in the fuel blend. The lack of fungibility in the ethanol/gasoline blending marketplace was discussed in Congressional hearings dating to the years when RFS1 and RFS2 were considered and enacted.⁵ Academics, many of whom thought we would approach the blend wall sooner than 2013, have discussed the issue publicly since at least 2008.⁶ A coalition of ethanol industry groups petitioned EPA to provide an E15 waiver – explicitly to address the ethanol blend wall – roughly four years ago.⁷ The first partial EPA waiver was awarded in October 2010.⁸ The primary impediment to getting beyond the ethanol blend wall has been petitions and lawsuits filed predominantly by the oil industry to overturn or delay the use of E15, and the use of pressure in the marketplace to dissuade the use of ethanol.⁹

³ See <http://www.epa.gov/otaq/regs/fuels/additive/e15/>.

⁴ See <http://domesticfuel.com/2013/03/21/economist-says-e85-will-solve-rins-price-issue/>.

⁵ See, e.g. <http://www.gpo.gov/fdsys/pkg/CHRG-109shrg66218/pdf/CHRG-109shrg66218.pdf>.

⁶ See, e.g. <https://news.uns.purdue.edu/x/2008b/081219TynerEthanol.html>.

⁷ See <http://www.epa.gov/otaq/regs/fuels/additive/e15/>.

⁸ See <http://www.epa.gov/otaq/regs/fuels/additive/e15/>.

⁹ See http://ethanolrfa.3cdn.net/73ef5a117ce5c1e112_9fm6b98iw.pdf.

2. What are the benefits and risks of expanded use of E-15 to automakers, other gasoline powered equipment makers, refiners, fuel retailers, and others involved in the manufacture and sale of gasoline and gasoline-using equipment?

There are a number of benefits associated with the expanded use of E15. First, E15 is not a required fuel, so at the fundamental level, E15 provides another option for consumers at the gas pump. Second, E15 blends will save consumers at the pump. The savings stem from three variables: (1) ethanol is currently 50-60 cents per gallon cheaper than gasoline; (2) ethanol displaces the need for other more expensive octane-enhancing petrochemicals; and, (3) the increasing prevalence of non-petroleum fuels acts as a hedge against pump price spikes when global oil markets become volatile.¹⁰ Third, E15 blends expand market access for ethanol, which directly benefits the advanced ethanol industry by providing the potential for market competitiveness based on price. The current situation, in which ethanol use is capped at 10 percent by volume, distorts the marketplace and protects the oil industry from having to compete with ethanol based on price. In terms of risk, the only real risk is the potential for misfueling by those owning engines not approved for the use of E15. However, these engines are also not approved for the use of diesel fuel, which is also readily available at the pump. Further, gasoline retailers offering E15 are required to adopt misfueling mitigation plans, which among other things, require strict labeling. It is important to note that 2001 and newer vehicles (i.e. those approved for E15 use) already account for roughly two-thirds of the vehicles on the road today.

3. What are the risks of the introduction and sale of E-15 to the owners of pre-2001 motor vehicles, boats, motorcycles, and other gasoline-powered equipment not approved to use it? Are there risks to owners of post-2001 vehicles? How do these risks compare to the benefits of the RFS?

E15 is the most tested fuel in EPA history, so there is no risk to owners of post-2001 vehicles. There is really only one engine test report calling into question the safety of E15 with regard to vehicles. The report, published by the oil industry funded Coordinating Research Council (CRC) and directly funded by the the American Petroleum Institute (API), recently offered that E15 could cause engine damage based on its testing of 3 cars. The U.S. Department of Energy issued a statement calling the report into question, stating that, “[w]e believe the choice of test engines, test cycle, limited fuel selection, and failure criteria of the CRC program resulted in unreliable and incomplete data, which severely limits the utility of the study.”¹¹ In the statement, DOE noted that it had “conducted its own rigorous, thorough and peer-reviewed study of the impact of E15 fuel on current, conventional vehicle catalyst systems ... comprised of 86 vehicles operated up to 120,000 miles each using an industry-standard EPA-defined test

¹⁰ See http://www1.eere.energy.gov/biomass/pdfs/biofuels_are_helping_your_pocketbook.pdf.

¹¹ See <http://energy.gov/articles/getting-it-right-accurate-testing-and-assessments-critical-deploying-next-generation-auto>.

cycle (called the Standard Road Cycle) ... [showing] no statistically significant loss of vehicle performance (emissions, fuel economy, and maintenance issues) attributable to the use of E15 fuel compared to straight gasoline.”¹² As stated in the answers provided above to Question #2, the only risk is the potential for misfueling. But this risk has been addressed through the requirement for misfueling mitigation plans that will clearly differentiate E15 blends from other blends. And as stated, owners of these engines have avoided using diesel fuel (which is also not certified for use in small gasoline engines) for decades.

4. What is the likely impact, if any, of the blend wall on retail gasoline prices?

At the fundamental level, the blend wall protects 90 percent of every gallon of gasoline from the threat of free market competition from ethanol. Put another way, the blend wall distorts gasoline markets by forcing ethanol producers (including advanced ethanol producers) to compete among themselves in a constrained marketplace capped at 10 percent of the blend, instead of allowing ethanol to compete with gasoline in an open marketplace. The problem with this dynamic is it leaves consumers vulnerable to sharp increases in world crude oil prices, because there is no fungibility between ethanol and gasoline that would otherwise allow for alternatives to be used when gasoline prices spike. In the more immediate timeframe, some members of the oil industry have suggested that the blend wall has led to an increase in the price of Renewable Identification Numbers (RINs), which in turn increases gas prices. This argument is extraordinarily divorced from the realities of how the RFS works. While it is true that RIN prices (for grain ethanol) have increased over the last 60 days, it is the obligated parties (i.e. oil companies) that are selling and trading RINs amongst themselves. In other words, oil companies get the RIN for free when they acquire the gallon of renewable fuel. If they choose to split the RIN from the gallon in the open market, they are doing so to *sell* the RIN (i.e. they gain from the sale) to another obligated or third party. If Oil Company A sells a 60 cent RIN that they received for free when they purchased a gallon of ethanol (at a 50-60 cpg discount to gasoline) to Oil Company B (most likely because Oil Company B is trying to avoid buying ethanol), it is categorically absurd to claim that this is an extra cost on the oil industry. Further, even if reality is suspended and one assumes that the RIN is a cost of compliance for the RFS, the math does not support the thesis that higher RIN prices increase gasoline prices. Oil companies are currently buying a gallon of ethanol at roughly 60 cents cheaper per gallon than gasoline, which affords the consumer a 6 cpg savings at the pump (in 10% ethanol blend). Even if RINs average 80 cpg for an entire year, which is about double the current average for 2013, and the entire cost of the RIN acquisition is passed through to the consumer (which is impossible because oil companies are often the sellers of RINs at a profit), the end result is a ~ 1 cpg cut on the 6 cpg of savings from using ethanol in a 10 percent blend. In simple terms, the fuel that the RFS is driving into the

¹² *Id.*

marketplace is making retail gasoline prices lower (not higher).¹³ In the process, however, reasonable RIN prices provide an incentive for fuel retailers to utilize more ethanol, which in turn drives ethanol use beyond the blend wall. As discussed, more ethanol/gasoline fungibility and competition will reduce gasoline prices in the long term.

5. What is the timing of the implementation challenges related to the blend wall? Will some entities face difficulties earlier than others?

The AEC generally supports the position taken by U.S. EPA in the Proposed Rule for the 2013 RFS required volumes.¹⁴ In the proposed rule, EPA highlights the flexibility provision in the RFS that allows obligated parties to bank RINs for use in the following year. Obligated parties banked roughly 2.6 billion RINs in 2012, which means that oil companies can easily comply with the RFS in 2013 with considerably fewer physical gallons than required for blending by the program.¹⁵ It is also important to consider the impacts of E15 and higher ethanol blends on the timing of the blend wall. For example, according to some experts, E85 penetration of just 2 percent of the gasoline pool would extend the blend wall by about 2 years, and E85 penetration of about 5 percent of the gasoline pool would provide full flexibility for the RFS through roughly 2018.¹⁶ Current market conditions are driving the use of higher ethanol blends. It is also important to emphasize that while the impact of the blend wall on existing ethanol producers is widely discussed, there is also a dampening effect on innovation. One of the primary risks associated with investing in advanced ethanol production is uncertainty in the marketplace. Constrained ethanol markets distort pricing in unpredictable ways, which in turn dissuades investment in next generation ethanol fuels made from alternative feedstocks. Knocking down the blend wall to allow ethanol and gasoline to compete based on price would allow innovators to unleash the full value proposition offered by cellulosic biofuels, which in turn will facilitate full compliance with the RFS.¹⁷

6. Could the blend wall be delayed or prevented with increased use of E-85 in flexible fuel vehicles? What are the impediments to increased E-85 use? Are there policies that can overcome these impediments?

As discussed, some analysts believe that E85 penetration of just 2 percent of the gasoline pool would extend the blend wall by about 2 years, and E85 penetration of about 5 percent of the gasoline pool would provide full flexibility for the RFS through roughly 2018.¹⁸ But E85 is only one solution. A relatively

¹³ For a detailed explanation, see <http://www.ethanolrfa.org/exchange/entry/stop-the-rinsanity-fact-checking-big-oils-claims-on-rin-price-effects/>.

¹⁴ See Docket ID No. EPA-HQ-OAR-2012-0546: Regulation of Fuels and Fuel Additives: 2013 Renewable Fuel Standards.

¹⁵ *Id.*, at FR9301.

¹⁶ See audio interview at <http://domesticfuel.com/2013/03/21/economist-says-e85-will-solve-rins-price-issue/>.

¹⁷ See AEC Progress report, http://ethanolrfa.3cdn.net/96a2f9e04eb357bbbd_1sm6vadqk.pdf.

¹⁸ See audio interview at <http://domesticfuel.com/2013/03/21/economist-says-e85-will-solve-rins-price-issue/>.

small penetration of E15 would have a similar effect. With regard to policy, there is a chicken-and-the-egg problem in which automakers have been reluctant to invest too aggressively in FFVs until the E85 pumps are offered, and retailers have been reluctant to invest too aggressively in E85 pumps until FFVs are predominant enough to ensure the potential for use of the fuel. Tax incentives have been provided to encourage retailers to make the investment, but the frequent threat of expiration (as opposed to the permanent tax incentives offered to the oil and gas industry) limits their effectiveness. Providing tax incentives is an effective way to spur certain market behavior, but the most efficient way to address the current chicken/egg dilemma is to require the manufacture of FFVs, as called for by legislation (the Open Fuels Standard Act) sponsored by Representatives John Shimkus (R-IL) and Elliot Engel (D-NY). FFVs are standard in Brazil at virtually no cost to the consumer. Yet, their availability unleashes the power of the marketplace to compete based on price. While U.S. automakers already produce significant numbers of FFVs as a percentage of new vehicles, this is an uncertain commitment that could change for any number of reasons. Requiring FFVs eliminates the risk that automakers will change course, which in turn allows ethanol innovators to depend on not being blocked out of the market when they commercialize their advanced fuels.

7. Is E-15 misfueling unavoidable? Are there lessons from the labeling and dispensing of diesel, E-85 and other fuels that prevent their misfueling that can also be applied to E-15? What specific actions are companies taking to address potential misfueling concerns under MMPs?

As discussed, consumers are quite used to making choices at the pump. While the options are all petroleum-based at the overwhelming majority of stations, engine owners requiring premium fuel tend to use premium fuel, while those needing gasoline tend not to fill their tanks with diesel fuel. EPA is well-versed in the risks of misfueling, and has addressed the issues with a substantial amount of guidance that is already making the use of higher ethanol blends straightforward for consumers.¹⁹

8. Can blend wall implementation challenges be avoided without changes to the RFS? Is the existing EPA waiver process sufficient to address any concerns? If the RFS must be changed to avoid the blend wall, what should these changes entail? Should any changes include liability relief or additional consumer protections for addressing misfueling concerns?

The RFS already allows for the flexibility to address the blend wall directly (and to adjust if the solutions are not in line with the RFS schedule). First, the program includes a sophisticated RIN trading program that provides flexibility to obligated parties and an incentive to gasoline retailers to utilize more ethanol when market conditions are favorable to increased ethanol use. This is how the RIN program is working today, and if left alone, will continue to work in the coming years. Second, EPA has the authority to waive the volumetric requirements of the RFS based on a broad set of market conditions. Some have

¹⁹ See <http://www.epa.gov/oms/regs/fuels/additive/e15/e15-mmp.htm>.

suggested that EPA has not used this authority. This is untrue. EPA has waived more than 97 percent of the blending obligation for cellulosic biofuels in successive years, and recently announced that they are voluntarily reconsidering the 2011 cellulosic volume requirements in the wake of the federal appellate court decision regarding 2012 volumes.²⁰ EPA also has the discretion to waive any part of the RFS if the Administrator determines, usually in response to petition, that the program is causing “severe harm” to the economy or the environment, or if there is inadequate supply of renewable fuel. Critics of the EPA decision not to waive the RFS in the wake of the 2012 drought seem to misunderstand how the RFS is already working to allow for year-to-year uncertainties like weather conditions. Because obligated parties are already allowed to delay or defer up to 20 percent of their obligation to future years, and because there are billions of excess RINs available to facilitate the process, waiving the RFS in the wake of the drought would not have had any significant effect on the industries alleging harm. In the event that the built-in flexibility provisions in the RFS are insufficient to address unforeseen market conditions, EPA will no doubt use its discretion responsibly. But it is simply wrong to suggest that the RFS is incapable of dealing with variables in the fuel energy marketplace, whether related to drought or the blend wall. As discussed above, the best solution to the blend wall is to address the problem of petroleum’s 90 percent control of the fuel blend directly, rather than tear up the landmark policy that is bringing these underlying market and policy failures to the fore.

9. Have the 2017 and Later Model Years Light Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy standards for cars and light trucks changed the implementation outlook of the RFS?

The recent CAFE/GHG standards have the potential to facilitate compliance with the RFS by driving the use of higher octane fuels, which in turn facilitates the use of more advanced engine technology. Advanced ethanol, for example, retains all the clean, octane-enhancing benefits of first generation ethanol, but also brings to the table tremendous carbon intensity reductions over gasoline. In fact, cellulosic ethanol is the lowest carbon liquid fuel in the world, and is significantly less carbon intensive than natural gas, hydrogen and electricity (for vehicles).²¹ The big question with regard to these and future fuel/vehicle regulations is whether ethanol will be properly valued as part of the regulation. For example, the current version of the CAFE/GHG does not seem to provide incentives for FFVs beyond 2016, while offering a variety of incentives for natural gas and electric vehicles. FFV deployment is critical to the ongoing evolution of the ethanol industry, particularly with regard to ultra-low carbon ethanol. EPA should balance its approach to alternative fueled vehicles in the rule to ensure that cellulosic biofuels are allowed to compete in the marketplace with gasoline based on price.

²⁰ See <http://www.bna.com/epa-informs-court-n17179873200/>.

²¹ See <http://www.arb.ca.gov/fuels/lcfs/workgroups/workgroups.htm#pathways>; and, http://www.arb.ca.gov/fuels/lcfs/lu_tables_11282012.pdf.

10. What other methods, including the use of drop-in fuels, are available to industry to ease the challenge posed by the blend wall?

As discussed, the best way to deal with the blend wall (from both a cost and efficiency perspective) is to require FFVs, which in turn will provide fuel retailers with the clear market opportunity and certainty to make the investments necessary to facilitate the blending of ethanol and gasoline based on price and performance. Gasoline and ethanol fungibility will in turn provide the proper signal to investors to invest in advanced ethanol fuels and technologies. Tax credits are also important, and warranted given the permanence and magnitude of the tax credits provided to oil and gas.²² There are indeed other types of drop-in, advanced biofuels (in addition to advanced ethanol) that can be blended with gasoline and diesel fuel to comply with the RFS. In many cases, these fuels are part of the portfolio for companies represented by the Advanced Ethanol Council (AEC). In general, the Council supports the development of a spectrum of advanced biofuels and chemicals, some of which will no doubt be of a molecular structure more similar to hydrocarbon fuels. However, it is misleading to characterize these fuels as an alternative to more direct approaches to dealing with the blend wall. First, the blend wall is a manifestation of regulations that need to be updated, as opposed to some sort of practical limitation on the amount of ethanol that can/should be blended into gasoline. As such, removing this barrier merely gives ethanol producers the opportunity to compete with gasoline and other players in an open and competitive fuels market (i.e. it's not some sort of mandate for higher ethanol blends). Second, there are additional costs on the front end associated with producing four-chain, renewable hydrocarbon fuels from biomass that are necessary to realize the back end benefits of more closely matching the molecular structure of gasoline (i.e. the switch to "drop ins" is not free). This is not to say the challenges are insurmountable, but to date, the industry is not planning on producing sufficient "drop in" gasoline alternatives in the near term to warrant not dealing with the blend wall in other ways. In general, there is no legislative history to support the argument that the idea behind the RFS was to have "drop in" fuels satisfy the advanced biofuel blending schedule. The argument conflicts with the statute on its face.

11. What are the impacts on renewable fuel producers if the RFS is changed to avoid the blend wall?

One of the rationales offered by the authors of the white paper for reviewing the RFS is the fact that it has been five years since the enactment of the program and the markets have changed. There are a number of issues with this underlying proposition. First, one of the primary values of the RFS is the duration of its commitment to the renewable fuels industry. Consistent, long-term energy policy is a rare occurrence outside of the tax credits offered to the fossil fuels industry, and one of the primary reasons that the RFS has driven tens of billions of dollars of private investment into advanced biofuels is the duration of the program through 2022. Second, the RFS is designed to constantly account for

²² See <http://www.dblinvestors.com/documents/What-Would-Jefferson-Do-Final-Version.pdf>; and, <http://www.imf.org/external/pubs/ft/survey/so/2013/INT032713A.htm>.

changes in the marketplace. For example, obligated parties do not need to petition EPA to be allowed to defer their obligations from year to year; instead, they have a statutory allowance to defer 20 percent of their obligation each and every year. In another example, obligated parties do not even have to buy a physical gallon of renewable fuel; rather, they can buy a RIN at any time during the year to avoid blending ethanol (even for dubious reasons, as is the case now). The RFS is not a program that needs incremental reviews because it is designed with the right balance of stringency and flexibility to achieve its objectives without placing unreasonable burdens on obligated parties. Third, and most importantly, changing the law midstream (in fact, one third of the way through the schedule) will undercut investment and send a terrible signal to the global investment marketplace. Non-petroleum fuel investments are inherently risky. World oil markets are distorted by OPEC, which makes future pricing extremely unpredictable and difficult to gauge relative to the proposed value of an alternative. There is no guarantee that a new product with a clear value proposition will be purchased in the highly consolidated, vertically integrated liquid fuel marketplace that has already demonstrated a willingness to leave money on the table to avoid blending first generation ethanol. The federal government's 15-year commitment to the RFS, as set forth in the renewable fuel blending schedule established by the Energy Independence and Security Act of 2007, provides a durable framework for the renewable fuels industry to produce new fuels and change the fuel marketplace notwithstanding the market dynamics working against us. The mere possibility of a change in law, much less an actual one, increases investment risk and threatens to undercut billions of dollars of existing and future investment in the United States.

The bottom line is the RFS is the global gold standard when it comes to advanced biofuel policy. It is the U.S. advantage when it comes to attracting a quickly innovating industry to the United States. Legislative intervention at this point in its deployment is unwarranted and would be the equivalent of exporting the advanced biofuels industry opportunity to other countries that are maintaining their long-term commitment to renewable energy.

Thank you for the opportunity to comment on RFS.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Brooke Coleman', with a stylized, flowing script.

R. Brooke Coleman

Executive Director

Advanced Ethanol Council (AEC)



**COMMENTS OF THE
AMERICAN FUEL & PETROCHEMICAL MANUFACTURERS
ON THE ENERGY & COMMERCE COMMITTEE'S
"RENEWABLE FUEL STANDARD ASSESSMENT WHITE PAPER"**

The American Fuel & Petrochemical Manufacturers (AFPM)¹ submits these comments in response to the House Energy & Commerce Committee's whitepaper on the Renewable Fuels Standard (RFS) and blendwall. As manufacturers of liquid transportation fuels, AFPM and its members are the obligated parties under the RFS. Our nation's domestic petroleum refiners are committed to manufacturing safe, reliable and clean transportation fuels, and we will continue to oppose any actions that could endanger the safety of the American families, farmers and truckers we serve every day. We take the confidence Americans place in our products – demonstrated by the millions of times each day that consumers purchase gasoline and diesel fuel – very seriously.

AFPM opposes the mandated use of alternative fuels and supports the sensible and workable integration of alternative fuels into the marketplace that allows consumers to choose the fuels that best fulfill their needs. Energy policy based on mandates ultimately disadvantages consumers. There is no free market if every gallon of biofuels – including those that do not exist – is mandated. Mandates distort markets and result in stifled competition and innovation.

The Committee's action is taking place at a critical time for the RFS. As the mandated annual biofuel volumes continue to increase in an environment of declining gasoline demand, ethanol will soon exceed the 10 percent compatibility limit of the overwhelming majority of vehicles and fuel retail infrastructure in the U.S. This is being referred to as the "E10 blendwall." The E10 blendwall is approaching and its early impacts already are being reflected in the exponential increase in Renewable Identification Number (RIN)² prices and volatility. Some obligated parties are finding it impractical to acquire sufficient RINs to cover their production or import of gasoline and diesel. 2014 and 2015 will likely present circumstances that result in many obligated parties being unable to acquire enough RINs to meet their RFS obligations at current production levels. Sales of E85 continue to face consumer rejection and will be too low to help while E15 still has significant problems to overcome and will not be available on a widespread basis.

Congress has the opportunity to examine the original reasons for the RFS and determine whether its stated goals are still applicable. The national conversation about energy

¹ AFPM is a trade association representing high-tech American manufacturers of virtually the entire U.S. supply of gasoline, diesel, jet fuel, other fuels and home heating oil, as well as the petrochemicals used as building blocks for thousands of products vital to everyday life.

² A RIN is a unique 38-digit number assigned to each gallon of biofuels. Ethanol RINs can only be generated when ethanol is produced or imported and RINs can only be used for RFS compliance when an obligated party purchases the ethanol or after the ethanol is blended with gasoline.

independence and security (ironically the name of the enacting statute) is completely different than it was in 2007. In particular, monumental advances in technology and engineering have unlocked U.S. energy potential and the conversation has shifted from one of scarcity to one of abundance. According to the EIA 2012 Annual Energy Outlook, between 2007-2012 U.S. oil imports fell from 60 percent of consumption to 41 percent and North America is on track to become 100 percent energy secure by 2025.

Furthermore, the promised environmental benefits of the RFS are not materializing—in fact, according to EPA and National Academy of Science’s own data, the RFS will raise GHG emission between now and 2022, effectively offsetting expected GHG reductions from fuel efficiency standards.³ Moreover, corn ethanol requires enormous amounts of water, approximately 17-239 gallons of water per gallon ethanol, as compared to 2.6-6.2 gallons of water per gallon gasoline.⁴

Finally, the promised advanced and cellulosic biofuels have not materialized. Last year the U.S. imported 92 percent of its obligation to meet the non-cellulosic advanced category, and only 1,000 gallons of cellulosic biofuel was available for compliance (following two years of zero production). This is yet more evidence that government cannot mandate innovation.

Policymakers should carefully consider the potential impact of policies on the environment, energy security, and consumers. Unfortunately, market interfering regulations or legislation, especially involving energy and environmental policies, can and do have significant unintended negative consequences. Recognizing this fact, governments across the globe are rethinking biofuels mandates amid serious economic and environmental concerns. The RFS is unworkable and AFPM urges its full repeal.

Questions for Stakeholder Comment

1. To what extent was the blend wall anticipated in the debate over the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007?

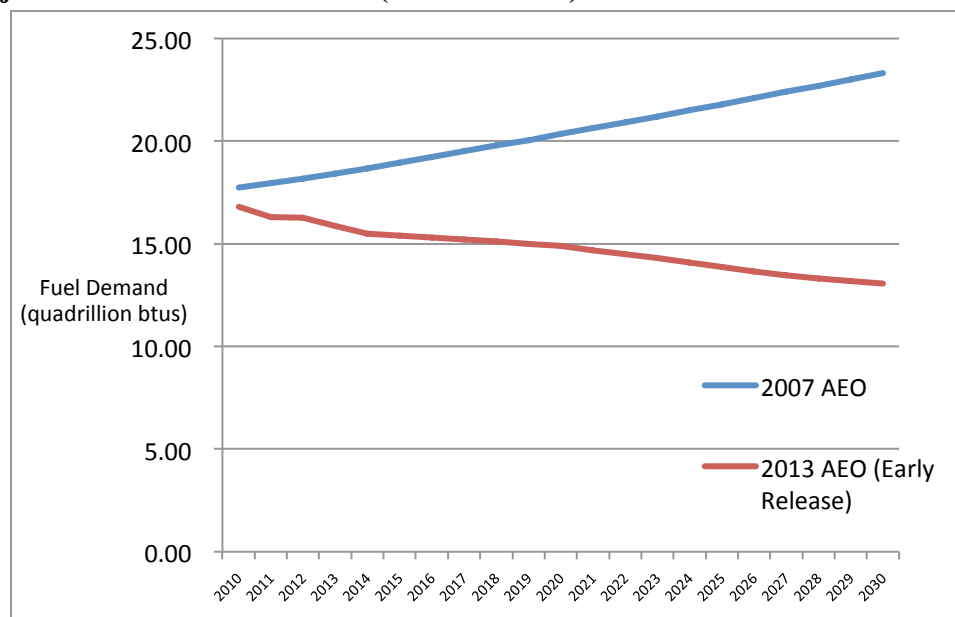
The U.S. energy landscape has shifted dramatically since 2007, and while the blendwall is not a new concept, it is arriving much sooner than many experts projected. When Congress passed RFS2 in 2007, the country used more than 144 billion gallons of gasoline and experts predicted that gasoline demand would continue to grow. Were that the case, obligated parties could safely integrate 15 billion gallons of conventional biofuels into the fuel supply without exceeding the E10 blendwall. Today, the world is a different place; gasoline demand continues to decline, therefore the amount of ethanol that can be safely incorporated into our fuel supply is lower than expected several years ago. In 2007 EIA projected nearly 150 billion gallons of fuel demand in 2012, whereas actual consumption only totaled roughly 134 billion gallons. Fuel economy standards and changes in driving habits will exacerbate this trend in the coming years. In its 2012 Annual Energy Outlook, EIA projected 2022 gasoline consumption will be 25 percent lower than it projected in 2007 (see fig. 1). In fact, EIA projects the U.S. will only use

³ Potential Economic and Environmental Effects of U.S. Biofuel Policy”, NAS, October 2011, http://www.nap.edu/catalog.php?record_id=13105 and references therein

⁴ *Id.*

approximately 124 billion gallons of gasoline in 2022. At that level of demand, the E10 blendwall will be approximately 12.4 billion gallons of ethanol—2.6 billion gallons short of the implied corn ethanol mandate before one even considers advanced and cellulosic ethanol.

Fig. 1 Projected Motor Fuel Demand (2007 vs. 2013)



2. What are the benefits and risks of expanded use of E15 to automakers, other gasoline powered equipment makers, refiners, fuel retailers, and others involved in the manufacture and sale of gasoline and gasoline-using equipment?

More than 95 percent of cars on the road today were not designed or warranted to use more than E10. None of the 200 million lawnmowers, boats, motorcycles, snow blowers or other non-road/off-road equipment is capable of using more than E10. More than 90 percent of gas stations are not owned by refiners, and more than half of U.S. gas stations are single store operators that do not want to incur the potential liability of selling a fuel that will damage consumers' cars and other engines. As we discuss below, there is simply no upside—particularly for consumers—in forcing E15 into the market through a combination of the RFS mandates and insufficient regulatory rigor.

3. What are the risks of the introduction and sale of E15 to the owners of pre-2001 motor vehicles, boats, motorcycles, and other gasoline-powered equipment not approved to use it? Are there risks to owners of post-2001 vehicles? How do these risks compare to the benefits of the RFS?

In November 2010, EPA approved a “partial waiver,” with conditions, that would allow a 50 percent increase in the ethanol content (from 10 percent to 15 percent) in gasoline for use in

vehicles that are model year 2007 and later.⁵ In January 2011, the Agency expanded the waiver to include cars and light duty trucks manufactured after model year 2000. This decision will create significant problems in the marketplace. Although EPA issued a partial waiver to allow E15 to enter the marketplace, due to vehicle and refueling infrastructure compatibility issues, E15 will not solve the blendwall problem. EPA concluded that E15 will not damage the emissions control systems of vehicles produced after 2000; however, subsequent data confirms that E15 will damage other engine components and virtually all of the automobile manufacturers have warned against the use of E15 in the vast majority of vehicles on the road. As such, the threat of potential liability from selling E15 stands as a real world obstacle to the use of this mid-level blend.

Automobiles Are Not Designed To Use E15

While Ford and General Motors recently announced they will begin hardening vehicles for E15 in 2012, 95 percent of vehicles on the road are not designed to use E15. In fact, auto manufacturers have explicitly warned that warranties will be voided by using E15 in any car manufactured prior to 2012. Underscoring this point, in 2011, Rep. Sensenbrenner wrote to auto manufacturers and asked: Will E15 damage engines of model year 2001 and later? Will your warranties cover damage from E15? Will E15 negatively affect fuel economy? Automakers made it clear that E15 will damage engines and emissions control systems, void warranties, and reduce fuel efficiency.⁶

Consumers should not be put at risk because of equipment malfunctions due to an incompatible fuel. While EPA determined that E15 will not damage the emissions control systems in MY 2001 and later vehicles, subsequent independent testing has confirmed that E15 damages the fuel pumps and other engine components. A 2012 Coordinating Research Council (CRC) durability study documented engine failures for two popular cars, out of eight tested, when operated on E15.⁷ CRC estimates there are more than five million cars on the road today with similar characteristics as the models that failed. Subsequent CRC testing found that E15 would damage the fuel systems in millions of post-2001 model year vehicles.⁸

EPA has chosen to ignore concerning data from the ongoing CRC E10+ testing program⁹ and made a premature decision to approve the fuel. EPA and DOE were aware of this on-going research and were briefed on multiple occasions.¹⁰ EPA could have denied or delayed the request to approve E15 until all scientific data are collected and analyzed, but instead chose to approve E15 partially and conditionally. The Agency's partial waiver decisions have put vehicle and engine manufacturers and consumers at significant risk.

⁵ 75 *Federal Register* 68094 (11/4/10). This was expanded by EPA in another partial waiver to include MY 2001-2006 gasoline vehicles (76 *Federal Register* 4662; 1/26/11). The use of E15 in older vehicles and all small engines is prohibited by EPA; this approval is "partial" because of this remaining restriction.

⁶ To view letters from companies and Rep. Sensenbrenner's letter to EPA, http://sensenbrenner.house.gov/UploadedFiles/E15_Auto_Responses.pdf

⁷ "Intermediate-level Ethanol Blends Engine Durability Study," April 2012, CRC Project CM-136-09-1B.

⁸ "Durability of Fuel Pumps and Fuel Level Senders in Neat and Aggressive Fuels," CRC Report No. 664, January 2013.

⁹ <http://www.crao.org/news/Mid%20Level%20Ethanol%20program/index.html>

¹⁰ Including meetings on 6/3/09, 9/16/09, 2/2/10, and 5/5/10.

Incongruously, increased ethanol blends damage older cars' catalytic converters, installed to reduce emissions. In particular, engine and catalytic control damage could result in increased exhaust emissions. As ethanol content in fuel increases, it burns hotter, risking overheating of equipment such as small engines in lawn equipment, exposing operators to safety risks. Ethanol is also corrosive and miscible in water. All of these effects increase the possibility for potential physical damage to tanks and fuel dispensing equipment, and negative impact on the environment.

Non-Road And Off-Road Engines Prohibited From Using E15

EPA's partial waiver introduces the probability of consumer misfueling. This is particularly concerning because several studies show gasoline blends containing more than 10-percent ethanol could lead to engine damage in older vehicles and non-road engines, such as those in chainsaws, lawnmowers, boats and snowmobiles. The Outdoor Power Equipment Institute (OPEI) has issued stern warnings about E15 ethanol and its potential adverse effects on more than 200 million pieces of lawn and garden equipment. Industries ranging from outdoor power equipment manufacturers, to automakers to food producers have all expressed concern over the E15 partial waivers.¹¹

Retail Gas Stations Can Not Dispense E15

The Government Accountability Office conducted a review of the implementation challenges associated with intermediate ethanol blends in 2011.¹² GAO reported significant challenges with the fuel delivery infrastructure needed to accommodate the retail sale of E15¹³:

First, federal and state regulations governing health and environmental concerns must be met before these blends are allowed into commerce, and fuel-testing requirements to meet these regulations may take 1 year or more to complete. Second, according to knowledgeable federal officials and UL representatives, federal safety standards do not allow ethanol blends over E10 to be dispensed at most retail fueling locations, and federally sponsored research has indicated potential problems with the compatibility of intermediate ethanol blends with existing dispensing equipment. Third, according to EPA and several industry representatives, the compatibility of many UST systems with these fuels is uncertain, and retailers will need to replace any components that are not compatible if they choose to store intermediate blends. Fourth, industry associations representing

¹¹ See Joint Opposition to Petition from Growth Energy to Increase the Allowable Ethanol Content of Gasoline to 15 Volume Percent <http://www.followthescience.org/wp-content/uploads/final-joint-letter-to-epa-on-e15-petition-July-2009-3.pdf>

¹² Government Accountability Office, "Biofuels: Challenges to the Transportation, Sale, and Use of Intermediate Ethanol Blends," June 2011, available at <http://www.gao.gov/assets/320/319297.pdf>

¹³ *Id.* at 20.

various groups, such as fuel retailers and refiners, are concerned that, in selling intermediate ethanol blends, fuel retailers may face significant costs and risks, such as upgrading or replacing equipment.

The National Association of Convenience Stores highlighted some of these issues before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce on May 5, 2011:

By law, all equipment used to store and dispense flammable and combustible liquids must be certified by a nationally recognized testing laboratory as compatible with that liquid.

Currently, there is essentially only one organization that certifies our equipment – Underwriters Laboratories (UL). UL establishes specifications for safety and compatibility and runs tests on equipment submitted by manufacturers for UL listing. Once satisfied, UL lists the equipment as meeting a certain standard for a certain fuel.

Prior to last spring, however, UL had not listed a single motor fuel dispenser (a.k.a., pump) as compatible with any fuel containing more than 10% ethanol.^[14] This means that any dispenser in the market prior to last spring – which would represent the vast majority of my dispensers - is not legally permitted to sell E15, E85 or anything above 10% ethanol – even if it is technically able to do so safely.

If I use non-listed equipment, I am in violation of OSHA regulations and may be violating my tank insurance policies, state tank fund program requirements, bank loan covenants, and potentially other local regulations. Furthermore, if my store has a petroleum release from that equipment, I could be sued on the grounds of negligence for using non-listed equipment, which would cost me significantly more than the expense of cleaning up the spill.

So, if none of my dispensers are UL-listed for E15, what are my options?

Unfortunately, UL will not re-certify any equipment. Only those units manufactured after UL certification is issued are so certified – all previously manufactured devices, even if they are the same model, are subject only to the UL listing available at the time of manufacture. This means that no retail dispensers, except those produced after UL issued a listing last spring, are legally approved for E10+ fuels.

¹⁴ In Spring 2010, UL certified two E85 fueling dispensers.

In other words, the only legal option for me to sell E15 is to replace my dispensers with the specific models listed by UL. On average, a retail motor fuel dispenser costs approximately \$20,000.

EPA is also concerned about compatibility. The Agency issued the following:

...final guidance on how owners and operators of underground storage tanks (USTs) can demonstrate compliance with the federal compatibility requirement for UST systems storing gasoline containing greater than 10 percent ethanol or diesel containing greater than 20 percent biodiesel. Because it is common for tank owners to use their tanks for 30 years or more, most UST systems currently in use are likely to contain components not designed to store ethanol blends greater than 10 percent. ... Please note that this action under the CAA [partial E15 waivers] has no legal bearing on the requirement for tank owners to comply with all applicable UST regulations, including the UST compatibility requirement in 40 CFR 280.32. Under the existing federal UST regulation, tank owners must meet the compatibility requirement for UST systems to ensure safe storage of any regulated substance, including higher ethanol and biodiesel blends. ... If tank owners cannot demonstrate compatibility, they would not be able to store ethanol blends greater than 10 percent or biodiesel blends greater than 20 percent in the UST system. ... To be in compliance with 40 CFR 280.32, owners and operators of UST systems storing ethanol-blended fuels greater than 10 percent ethanol or biodiesel-blended fuels greater than 20 percent biodiesel must use compatible equipment.¹⁵

Ethanol compatibility problems cannot be overlooked because (1) UL has not certified a significant number of new dispensers for E15; (2) UL certification is not retroactive and no existing dispensers are approved for E15; (3) EPA requires owners and operators of UST systems storing E15 to use compatible equipment, and (4) most UST systems currently in use are likely to contain components that are not designed for E15. As a result, large investments must be made at retail stations to upgrade the refueling infrastructure. More than 90 percent of these stations are independently owned and the majority qualify as small businesses.

Irregular Regulatory Procedure for E15 Approval

American families, farmers, truckers and businesses rely on AFPM members millions of times every day to provide affordable, reliable and safe fuels for use in their gasoline-powered on-road and non-road engines. EPA's partial waiver decisions undermine this reliance. AFPM is concerned about procedural irregularities that EPA engaged in to cut corners to approve the use of E15 before its use has been justified by scientific testing. For example:

- The Clean Air Act clearly requires that any group petitioning EPA for a waiver to change the blend of ethanol in gasoline provide all information necessary to approve the waiver. But Growth Energy – the ethanol industry the sought the E15 waiver – failed to do this,

¹⁵ 76 *Federal Register* 39095; 7/5/11

since substantial additional testing by EPA and the U.S. Department of Energy was required. We believe yet more testing and evaluation of data were, and are, needed.

- EPA based its E15 partial waiver decision on studies submitted to the public rulemaking docket on the day before EPA announced the first partial waiver, providing no time for stakeholder review or meaningful public comment on crucial information used to justify the approval of E15. EPA's partial waiver decisions were based almost entirely on data submitted to the record after the public comment period closed in 2009. We believe this is a violation of the Administrative Procedures Act.

These irregularities are important – not just minor technicalities.¹⁶ EPA is rushing to bring E15 to the marketplace and putting consumers at risk. Congress should not allow EPA to put the promotion of the ethanol industry ahead of protection of the American people. Consumers have the right to expect federal officials to devote adequate time and funds to follow real science - not political science - and to put the interests of the American people first. No one should be asked to pump first and ask questions later and become a participant in a giant science experiment to line the coffers of large agribusinesses while overlooking the real-world implications of E15. Congress should repeal EPA's partial waivers for E15.

E15 Cannot Solve the Blendwall

While a common refrain from ethanol proponents is that obligated parties should “just blend more E15” to avert the blendwall, such calls ignore the fact that more than 90 percent of gas stations are owned by independent businesses, not by obligated parties. In fact, GAO reports that major integrated companies own only 1 percent of gas stations and only half of stations nationwide are “branded” franchises. The remainder of retailers are unbranded independent business, and 56 percent of all stations are single-store operators.¹⁷ As discussed above, most fueling infrastructure is not compatible with E15 and station owners are reluctant to put in new infrastructure to sell a fuel that creates the risk of product liability and customer backlash. Most obligated parties, therefore, are caught in a scenario where they do not control the production of the biofuel, the blending and generation of RINs, or the means to get it to retail.

For the foregoing reasons, E15 will not be in widespread use, particularly in the short term. However, for illustrative purposes on the magnitude of this problem—if all the foregoing concerns were mitigated and every gallon of E10 were replaced with E15 and could be used safely in hundreds of millions of cars, boats, and small engines, the fuel supply could only take about 20 billion gallons of ethanol in an RFS that calls for 36 billion gallons of biofuels—including an implied mandate of 15 billion gallons of corn ethanol, 16 billion gallons of

¹⁶ AFPM's lawsuit challenging EPA's E15 partial waivers were consolidated with others (*Grocery Manufacturers Association, et al. v. EPA* in the U.S. Court of Appeals for the District of Columbia Circuit). The court dismissed these challenges on procedural grounds and did not rule on the merits, holding that neither the petroleum industry, food industry, nor engine manufacturers had standing to challenge EPA's decision. Petitioners are appealing this decision to the U.S. Supreme Court.

¹⁷ Government Accountability Office, “Biofuels: Challenges to the Transportation, Sale, and Use of Intermediate Ethanol Blends,” June 2011, available at <http://www.gao.gov/assets/320/319297.pdf>.

cellulosic biofuels (the majority of which is expected to be ethanol), 4 billion gallons of undifferentiated advanced biofuels, and at least one billion gallon of biomass based diesel.

While some of the RFS would undoubtedly come from non-ethanol biofuels such as expanded biodiesel use, even the limited development of second generation biofuels still focus on ethanol. In reality, E15 would only amount to putting a bandaid on a compound fracture and obligated parties will hit an E15, E20, E30, and up to an E40 blendwall in less than a decade. In fact, the National Association of Convenience Stores estimates that to fully implement both CAFE and the RFS by 2022, the U.S. would need to average nearly E40 nationwide.

AFPM is not anti-ethanol – our members blend it with gasoline every day to manufacture the E10 fuel that safely powers American vehicles and small engines. In fact, many of our members produce ethanol- including at least one that makes more ethanol than 97 percent of the Renewable Fuel Association’s membership. It is now time for a dose of reality as to the amount of ethanol that can be incorporated into the gasoline supply without damaging engines and refueling infrastructure. Given these real world limitations, E10 represents the maximum amount of ethanol that can be blended in the United States.

4. What is the likely impact, if any, of the blend wall on retail gasoline prices?

While it is difficult to project future gasoline prices, the RFS is without question raising costs for U.S. refiners. A recent study by NERA Consulting, conducted for the American Petroleum Institute, estimates that by 2015 the blendwall will force a 300 percent increase in diesel costs and 30 percent increase in gasoline costs.¹⁸

These impacts are already becoming apparent in the market for renewable identification numbers (RINs). Corn ethanol RIN prices rose from \$.02 last year to \$.07 at the beginning of 2013. However, since the beginning of 2013, RIN prices have skyrocketed- reaching highs of over \$1.00—and continue to remain volatile. AFPM believes these increases are a strong indication that markets are anticipating the blendwall. This is because RINs can only be used for compliance when a gallon of biofuel is purchased for blending. As obligated parties maximize E10 production and RFS mandates force the blending of ethanol in concentrations exceeding 10 percent, RINs will become increasingly scarce, RIN costs will likely rise significantly, and obligated parties have only a few options to comply. The day of this submission, EPA reported that 550 million fewer RINs were carried over from 2012 than it anticipated previously- further reducing flexibility for 2013 compliance.

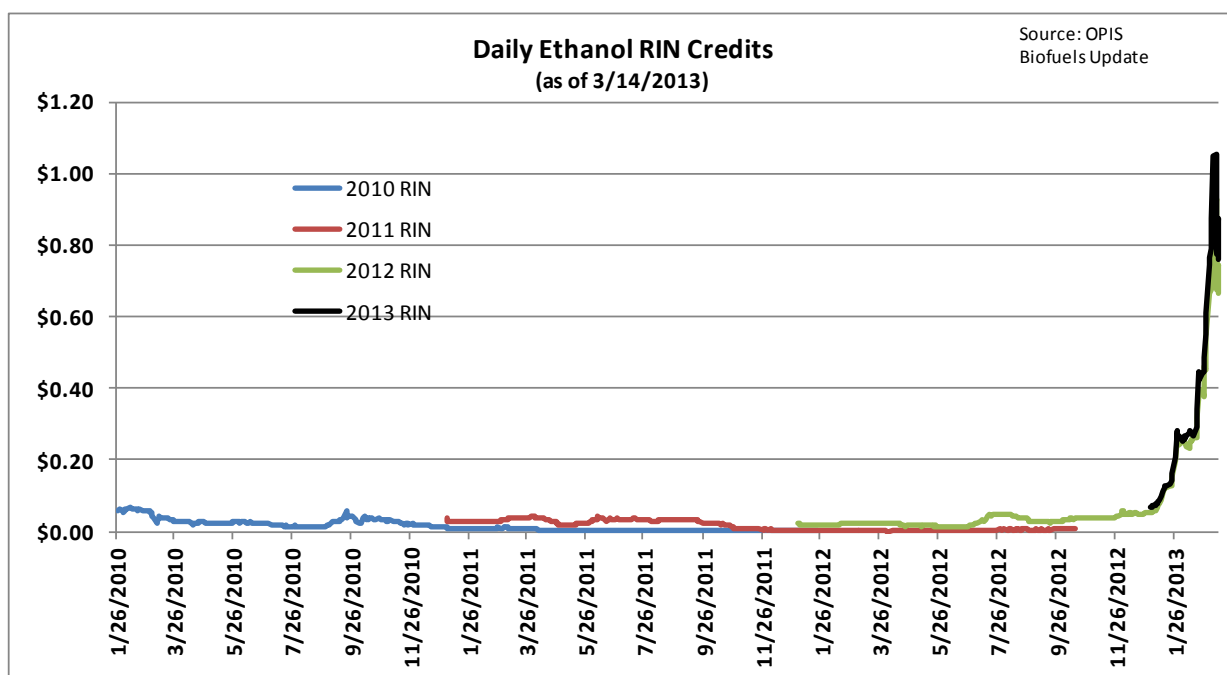
In the face of the E10 blendwall obligated parties that cannot acquire sufficient RINs have four options: (1) limit production of gasoline and diesel, (2) export gasoline and diesel, (3) use banked RINs (although many obligated parties do not have banked RINs in sufficient quantities to meet their obligations), or (4) carry the deficit forward one year (into an even worse situation the following year where the mandates are even higher and where a party that carries forward a deficit must clear the deficit and meet its RVO in full in the second year).

¹⁸ See NERA Economic Consulting, *Economic Impacts Resulting from Implementation of RFS2 Program* (October 2012).

While each obligated party is unique and will use some combination of these options to meet their obligation, there is no ideal solution but one thing is abundantly clear—each option creates downsides for consumers. It is worth noting that while RIN prices have increased dramatically in 2013 on the expectation of the blendwall, as the RFS-mandated volumes grow, the challenges—and their associated costs—will become all the more stark.

These realities combined with the impacts of the drought on corn prices constitute severe economic harm unforeseen by the Congress when the RFS was enacted. The E10 blendwall is not a story woven by obligated parties, but rather a very real problem that is confirmed by a documented RIN market imbalance. The following graph illustrates the market's reaction to the approaching blendwall and the significant shortage of RINs available for compliance with the RFS.

Fig 2: Daily Ethanol RIN Credits



Source: OPIS Biofuels Update (3/14/2013)

The graph clearly illustrates that when the blendwall was not at issue (pre-2013), ethanol RIN prices were typically priced below 4 cents per RIN. This changed at the end of 2012, when it became obvious that there was not enough gasoline available for blending the required amount of ethanol. This anticipated scarcity resulted in a meteoric rise in ethanol RIN prices. This rise was fueled by EPA's proposal for 2013 volumes, which showed that EPA was not prepared to use the tools at its disposal to address the blendwall.

5. What is the timing of the implementation challenges related to the blend wall? Will some entities face difficulties earlier than others?

This whitepaper was issued at a critical time for RFS2. The E10 blendwall is fast approaching and many obligated parties are concerned that they may be unable to acquire sufficient RINs to cover their 2013 production of gasoline and diesel as demonstrated by the increase in ethanol RIN costs since EPA issued the Proposed Rule in January and a 20-fold increase since last summer. This dramatic increase in the price of ethanol RINs is the market's reaction to the realization that the blendwall is a very real problem that will inhibit obligated parties' ability to comply with the Proposed Rule. Congress needs to take an honest look at the marketplace and the nation's ability to consume the mandated volume of biofuels. This is not about the ability to produce biofuels, but rather our limited ability to consume them. Existing engine technologies, compatibility with fuel delivery infrastructure, and consumer impacts are real world circumstances that require Congress to repeal the RFS.

The RFS provides limited options to obligated parties that cannot acquire sufficient RINs, such as reduce their production of gasoline and diesel or export these transportation fuels. Each of these options will have a harmful impact upon consumers.

EPA acknowledged that the blendwall could be a problem for 2013 (see 78 *Federal Register* 9301). In the monthly Short-Term Energy Outlook (released on February 12, 2013), EIA projects that gasoline demand in 2013 will be 8.73 million barrels/day, or 133.83 billion gallons. Assuming that E10 can be blended throughout the country, then ethanol consumption would be 13.383 billion gallons versus the proposed requirement of 13.8 billion gallons for conventional biofuels.¹⁹ Assuming 10 percent ethanol can be blended into every gallon nationwide, the proposed RFS Renewable Volume Obligations (RVOs) would result in 417 million gallons of ethanol that could not be absorbed into the gasoline pool without exceeding the 10 percent threshold. This systemic problem already is creating market uncertainty and has resulted in a major increase in the price of ethanol RINs since the beginning of the year. The cost to obligated parties purchasing these expensive RINs increases their operating costs and ultimately will disadvantage consumers.

This blendwall issue is not new and should not come as a surprise. While many entities—including GAO and DOE—warned EPA and Congress about the blendwall, NPRA²⁰ specifically raised it in each of the following hearings:

- April 1, 2009 Senate Environment and Public Works Committee
- April 28, 2010, the Subcommittee on Energy and Environment of the House Energy and Commerce Committee,
- April 13, 2011, the Senate Environment and Public Works Committee,
- May 5, 2011, the Subcommittee on Energy and Power of the House Energy and Commerce Committee,

¹⁹ This does not include 666 million gallons of sugarcane ethanol from Brazil that is expected by EPA in 2013 (78 *Federal Register* at 9285 and 9286) – this additional imported ethanol is required to satisfy a separate advanced biofuel mandate also required by the RFS. This also excludes EPA's expectation of 49 million gallons of other advanced ethanol in 2013 (see 78 *Federal Register* 9298).

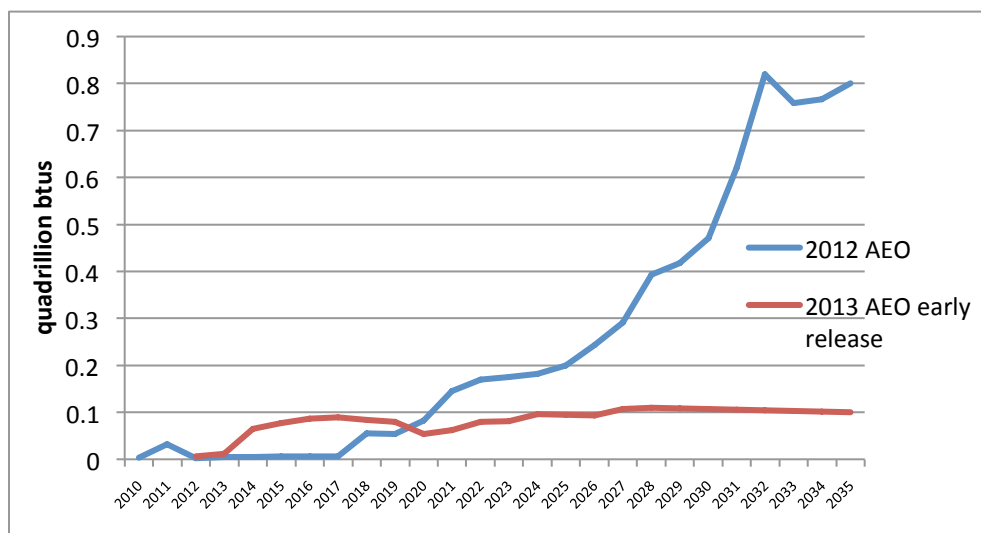
²⁰ Prior to January 2012, AFPM was the National Petrochemical and Refiners Association.

- July 7, 2011, the Subcommittee on Energy and Environment of the House Science Committee
 - November 2, 2011, the Subcommittee on Energy and Environment of the House Science, Space, and Technology Committee,
 - March 7, 2012, the Subcommittee on Energy and Power of the House Energy and Commerce Committee, and
 - May 31, 2012, the House Committee on Oversight and Government Reform.
- 6. Could the blend wall be delayed or prevented with increased use of E85 in flexible fuel vehicles? What are the impediments to increased E85 use? Are there policies that can overcome these impediments?**

There is no expectation that E85 sales will substantially contribute to meeting the renewable mandates of EISA due to limited infrastructure to sell the fuel and as long as the poor purchasing economics continue for the consumer. E85 is a mixture of 85 percent ethanol and 15 percent gasoline and can only be used in Flexible Fuel Vehicles (“FFVs”) – cars capable of running on either gasoline or E85. There are a relatively small number of these vehicles on the road and this percentage is projected to increase only slowly in coming years. In addition, FFV owners tend to fill up with gasoline more than E85, because after adjusting for the energy content of that fuel, E85 is significantly more expensive than regular gasoline. As of submission, AAA reports that E85 costs consumers \$.58 per gallon more on an energy adjusted basis. Unfortunately, any attempt by industry or government to entice increased purchases of E85 by selectively lowering the street price of E85 via additional subsidies or mandates will also introduce the likelihood of improper fuel purchases by cost-conscious consumers that do not have FFVs. This situation would cause an increase in fuel-related failures in incompatible motor vehicles and/or small engine equipment that are not designed for E85. There are currently no physical means or procedures in the E85 fuel distribution system to prevent consumers from using E85 fuel in non-compliant engines. In short, American consumers are set up for mass confusion and harm in the near future.

EIA reports that E85 usage is very small and decreased its projections markedly from its 2012 AEO to the 2013 AEO (early release). EPA has identified four key problems. (1) The current fuel distribution infrastructure cannot handle E85 and a significant investment in E85 facilities would be required; (2) no complete E85 dispenser system has been certified by UL; (3) fuel retailers are not likely to invest in E85 dispensers and tanks unless they are confident that E85 sales will recover their large investment expense; and (4) given the lower energy content of E85, it may not be possible to price E85 at a level acceptable to consumers that recoups the investment in refueling infrastructure.

Fig. 3: E85 Consumption: EIA now projects E85 use will remain flat due to infrastructure constraints and low consumer acceptance



Source: EIA AEO 2012, AEO 2013 early release

As previously mentioned, a gallon of ethanol also has less energy content than a gallon of gasoline. According to the Department of Energy’s Office of Energy Efficiency and Renewable Energy, FFVs get “about 20-30% fewer miles per gallon when fueled with E85.”²¹ Therefore, increased use of E85 is, at best, an uncertain RFS compliance strategy rather than sound energy policy, the implementation of which will displace only a fraction of demand for transportation fuels because of energy content and fuel economy differences.

Retail Infrastructure Hurdles

There will be significant investment requirements imposed on retail stations to offer E85 to a reluctant public. EIA has noted: “estimates for replacing one gasoline dispenser and retrofitting existing equipment to carry E85 at an existing fueling station range from \$22,000 to \$80,000 (2005 dollars), depending on the scale of the retrofit. By these estimates, the total investment cost for installation of biofuel pumps would range from \$0.8 billion to \$3 billion.”²²

CARB published a cost estimate: “The necessary E85 infrastructure at an existing gasoline dispensing facility or service station includes a 10,000 gallon tank, one dispenser with two nozzles, and other piping. The estimated costs in Table VIII-5 are based on a recent E85 installation at an existing service station.”²³

²¹ U.S. Department of Energy (Office of Energy Efficiency and Renewable Energy) and U.S. EPA, <http://www.fueleconomy.gov/feg/flextech.shtml>

²² U.S. Energy Information Administration, “Energy and Economic Impacts of Implementing Both a 25-Percent Renewable Portfolio Standard and a 25-percent Renewable Fuels Standard by 2025,” August 2007, p. 6.

²³ “Proposed Regulation to Implement the Low Carbon Fuel Standard, Volume I, Staff Report: Initial Statement of Reasons,” March 5, 2009, p. VIII-14. See http://www.arb.ca.gov/fuels/lcfs/030409lcfs_isor_voll.pdf

Cost of Installing E85 Dispensing Infrastructure
per Existing Service Station (2007 dollars)

<u>Equipment & Parts</u>	<u>Installation</u>	<u>Permits</u>	<u>Soil Disposal & Testing</u>	<u>Total</u>
72,000	87,000	5,000	8,000	172,000

CARB's estimate of \$172,000 per existing service station and EPA's projections of 900-1,820 new E85 retail facilities per year result in a large annual investment, \$155-313 million. Over 10 years, this adds up to \$1.55-3.13 billion (very similar to EIA's projection of \$0.8-3 billion). This is a significant hurdle and may be daunting if the payback is uncertain, especially since the average pre-tax profit of a retail station in 2006 was less than \$34,000.²⁴ Independent businesses are rightly skeptical about investing significant capital to sell fuel that consumers are not buying.

There is a concern that retail deployment of E85 presents economic challenges. A member of the National Association of Convenience Stores and the Society of Independent Gasoline Marketers of America testified on June 7, 2007 before the Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce:

The primary impediment to retailers converting a dispenser to E85 is equipment compatibility. Because E85 is more corrosive than regular gasoline or E-10, it requires equipment that is certified compatible with the fuel. In preparation for this hearing, I inquired of my equipment supplier to determine what would be required to convert one of my newer stations to sell E85. These stations have the newest equipment and, therefore, hold the best chance for existing equipment compatibility. I learned that my new steel tanks and my fiberglass tanks were certified compatible with E85. Our automatic tank gauges were listed compatible as were our fiberglass piping systems. However, we would have to replace several of the ancillary fittings, including the submersible turbine pump, the overfill drop tube and others like flexible hoses, spill buckets, ball valves, etc. In addition, our hanging hardware, which includes conventional nozzles, swivels, breakaways and curb hoses would have to be replaced with nickel plated units at an increased cost. For all of these conversions, including tank cleaning, we estimated the cost to be between \$6,000 and \$7,000. However, this does not include the dispenser itself. The two dispenser manufacturers each charge an additional fee for a new E85 compatible dispenser -- \$8,000 for Dresser-Wayne and \$7,300 for Gilbarco. Thus, a typical E85 dispenser can cost upwards of \$17,000 per unit. And this cost is for equipment that has not yet been certified compatible with E85 by Underwriters Laboratories. . . . We have spoken with several retailers who lament their decision to install E85 equipment because they have been

²⁴ Written testimony by the National Association of Convenience Stores and the Society of Independent Gasoline Marketers of America on June 7, 2007 before the Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce

unable to generate sufficient sales from these fueling positions to support their overall business model.

Congress should resist legislative efforts to address this issue. Congress should not mandate the installation of E85 pumps at retail gasoline stations and should not subsidize the installation of these E85 pumps. Let the free market work.

Few Vehicles Use E85

The limited number of FFVs will become even more of a problem as significantly larger volumes of renewable fuels are to be forced into the market due to EISA mandates. There are 10 million FFVs on American roads²⁵ – a small fraction of the 240 million plus vehicles Americans are driving today. Some U.S. automakers produce new FFVs, but only for a portion of new car sales. Other automakers do not make FFVs. However, the automakers statements indicate that in addition to existing legacy vehicles (*i.e.*, cars that have been purchased up to this point in time that run only on gasoline and won't be retired for several years), there will be a significant portion of newer vehicles entering the fleet that may be unable to operate on E85.

The production of FFVs was incentivized with Corporate Average Fuel Economy (CAFE) standard credits. However, some automakers do not produce FFVs and do not need these CAFE credits. Congress decided to phase-out FFV credits for compliance with CAFE standards in section 109 of EISA, which will likely decrease the number of new FFVs produced.²⁶ Moreover, FFVs that do not use E85 are generally less efficient than the same model vehicle designed to run on E10, because a FFV needs to be calibrated to run on a larger spectrum of blends, decreasing efficiency. Congress should defeat legislative proposals that would mandate FFV production. The free market should decide the future of FFVs without government interference.

Consumer Preference to Use Gasoline

To date, the drivers of flexible fuel vehicles have overwhelmingly refueled with gasoline and rarely chosen E85. The fuel for a FFV is a consumer choice. A potential requirement for the production of more FFVs will not necessarily result in a large increase in sales of E85 because drivers of FFVs have the option to select gasoline. EPA estimates that the current E85 refueling frequency rate is only 4% for FFVs with reasonable access to E85. EPA projects that this will need to increase to 58% to comply with the RFS2 program and consume 22 billion gallons of ethanol by 2022.²⁷ The current low refueling rate highlights consumer reluctance to use E85 as a fuel even when it is an option, likely due to the fuel economy penalty.

EPA shares this perspective:

²⁵ “2007 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards: EPA Response to Comments,” EPA-420-R-12-017, August 2012, pp. 6-134 and 6-135.

²⁶ *Id.* at 6-134 and 6-135. EPA decided not to include incentive multipliers in this rule.

²⁷ 75 *Federal Register* 14762 (3/26/10).

Similarly, EPA believes it is not appropriate to assume that ethanol FFVs will primarily use E85, as there is no extra vehicle cost to purchase an FFV (typically a consumer does not choose between an FFV and a non-FFV of the same vehicle model), E85 fuel is no cheaper and in fact usually more expensive per mile, and use of E85 reduces overall vehicle range since there is only one fuel tank (as opposed to PHEVs and dual fuel CNG vehicles which have two fuel storage devices and therefore the use of the alternative fuel raises overall vehicle range). Further, even with approximately 10 million ethanol FFVs in the US car and light truck fleet, fuel use data demonstrate that ethanol FFVs only use E85 less than one percent of the time.²⁸

7. Is E15 misfueling unavoidable? Are there lessons from the labeling and dispensing of diesel, E85 and other fuels that prevent their misfueling that can also be applied to E15? What specific actions are companies taking to address potential misfueling concerns under MMPs?

For the foregoing reasons, while misfueling is a major concern, perhaps the bigger concern is that E15 will be used in 2001 and newer cars and those cars may be damaged, notwithstanding EPA's approval of E15 for such vehicles. However, even the Agency recognizes the potential for consumer misfueling. EPA issued a partial approval for E15 and on the same day released a proposal for E15 misfueling mitigation.²⁹ The apparent necessity of this misfueling mitigation proposal and its release on the same day as the first partial approval for E15 clearly indicates EPA is concerned about the potential for consumer misfueling.

On July 25, 2011, EPA published the E15 misfueling mitigation final rule.³⁰ It includes a requirement for a retail pump label that is woefully inadequate and compounds the fundamental mistakes the Agency made in approving the sale of E15 in 2010. The rule is a terrible miscalculation and terrible news for millions of Americans who will inevitably face costly repair bills after misfueling their cars, trucks, motorcycles, boats, snowmobiles and outdoor power equipment with gasoline containing 15 percent ethanol.

The last time EPA allowed two types of gasoline to be sold side-by-side at retail stations – when leaded gasoline was phased out in the 1970s – EPA's own statistics reported that a high percentage of motorists mistakenly or intentionally misfueled their vehicles. This high rate of misfueling occurred despite the fact that EPA mandated physical barriers – fill pipe restrictors on vehicles and smaller nozzles on gasoline retail dispensers – in addition to pump labels. There are no physical barriers at retail stations in the case of the E15 partial waivers. EPA's apparent conclusion that pump labels will educate and warn consumers about the dangers of E15 misfueling flies in the face of the Agency's own experience and data.

²⁸ “2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Fuel Economy Standards: EPA Response to Comments,” EPA-420-R-12-017, August 2012, page 6-134.

²⁹ 75 *Federal Register* 68044 and 68094 (11/4/10)

³⁰ 76 *Federal Register* 44406

8. Can blend wall implementation challenges be avoided without changes to the RFS? Is the existing EPA waiver process sufficient to address any concerns? If the RFS must be changed to avoid the blend wall, what should these changes entail? Should any changes include liability relief or additional consumer protections for addressing misfueling concerns?

Only a full repeal of the RFS can address the multitude of problems with this flawed law. Although a waiver could relieve the immediate blendwall pressures, it would not solve the problem – only postpone the issue while policymakers seek a permanent solution.

If an RFS waiver were issued, when it expires and the statutorily mandated volumes exceed 13 billion gallons of corn ethanol again apply, RFS compliance may not be feasible. Growth in gasoline demand will be constrained by the EPA GHG emissions/NHTSA CAFE standards; these regulatory requirements will operate to further constrain the safe use of biofuels in the gasoline marketplace.

9. Have the 2017 and Later Model Years Light Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy standards for cars and light trucks changed the implementation outlook of the RFS?

These standards were promulgated at 77 *Federal Register* 62624 (October 15, 2012). They apply to light-duty vehicles for Model Years 2017-2025. The impact is likely to be a continuation of the decline in gasoline consumption because these regulations will offset any increases from population growth or increased miles traveled.

This trend has already started. Gasoline demand in 2011 was lower than in 2010. It dropped further in 2012. Declining gasoline demand will result in a smaller pool of transportation fuels and will necessitate a reduction in the current volumes of ethanol that can be safely blended. The 2017 and Later Model Years Light Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy standards for cars and light trucks perpetuate and accelerate the decline in gasoline consumption.

As we discussed previously, CAFE standards create an inherent conflict with the RFS—these policies are virtually mutually exclusive.

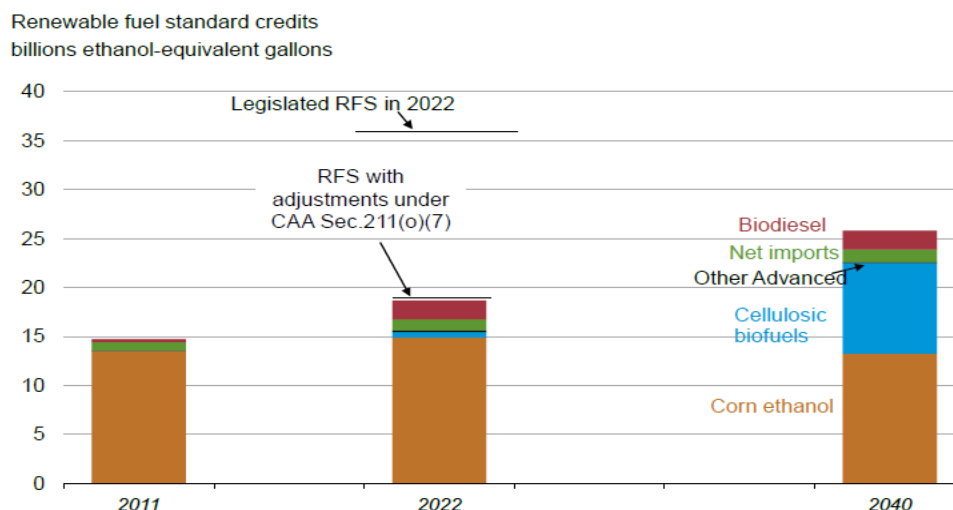
10. What other methods, including the use of drop-in fuels, are available to industry to ease the challenge posed by the blend wall?

Drop-in biofuels are not in the market today. Therefore, they are not a feasible solution for 2013, in the near future, or at the volumes needed to mitigate the problem through 2022. Drop-in fuels, while theoretically exciting, are not projected to be commercially available in large quantities during the life of the RFS. In fact, EIA projects that only 95 million gallons of drop-in gasoline (381 million gallons of drop-ins overall) will be available in 2022- enough to satisfy .07 percent of projected gasoline demand. Overall, EIA projects drop-in biofuels will fill less than 2 percent of the total advanced category in 2022.³¹ The fact remains that ethanol will

³¹ Mac Statton, “Drop In Biofuels in the AEO,” Energy Information Administration Biofuels Workshop, March 20, 2013

continue to be the dominant alternative fuel for the life of the RFS, and each new mandated gallon of ethanol adds to the blendwall problem.

Fig. 4 EIA projections not optimistic about biofuel production³²



Sources: EIA, Annual Energy Outlook 2013 Early Release and EIA, Annual Energy Outlook 2012

11. What are the impacts on renewable fuel producers if the RFS is changed to avoid the blend wall?

It is not possible to address this without knowing how it will be changed. However, ethanol is a valuable additive that refiners and terminals have historically used at levels exceeding mandated volumes, as ethanol was economic to use in blends up to 10 percent once the infrastructure was put in place to deliver, blend, and sell this product. The problem with the RFS is that it requires obligated parties to use fuels without regard for whether they are economic or deliver the best product at the lowest cost. Moreover, by requiring volumes disconnected from the realities of the marketplace, the RFS is setting refiners and the consumers they serve up for major difficulties in the years to come. Biofuels should compete in a free market with petroleum products.³³

Conclusion

AFPM members are dedicated to working cooperatively at all levels to ensure an adequate supply of clean, reliable and affordable transportation fuels. AFPM members are focused on building a better tomorrow for the American people, continuing our efforts to improve the environment at the same time we manufacture vital products to strengthen our economy and improve the lives of families. We stand ready to work with the Administration to

³² Source: Energy Information Administration, "Biofuels in the United States: Context and Outlook," presented to the National Academies of Sciences/Institute of Medicine Biofuels Workshop, January 24, 2013

³³ The free market would not apply in California because of its Low Carbon Fuel Standard.

ensure a stable and effective fuels policy that utilizes a diversity of resources to improve our national security, benefits consumers and protects our environment.

AFPM is not opposed to renewable fuels. We welcome all forms of energy to compete on a level playing field in a free market. We understand that no single energy source will meet all of our nation's needs, and that we need an "all of the above" solution to our energy challenges. Government should be encouraging all forms of energy to compete on a level playing field - not a field of dreams - to create jobs, serve consumers, pay taxes and succeed. This is how America became the world's most prosperous, powerful and productive nation. This is how our nation can climb out of economic malaise and build a new prosperity for Americans today and tomorrow.

For the foregoing reasons, Congress should repeal the Renewable Fuels Standard. AFPM appreciates the opportunity to share its views.



April 5, 2013

The Honorable Fred Upton
Chairman
House Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

The Honorable Henry Waxman
Ranking Member
House Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 2051

RE: White Paper Series on the Renewable Fuel Standard and Calls for Corporate Immunity

Dear Chairman Upton and Ranking Member Waxman:

The American Association for Justice (AAJ), formerly the Association of Trial Lawyers of America (ATLA), hereby submits these stakeholder comments in response to the notice by the Committee on Energy and Commerce (hereinafter Committee) of a “White Paper Series on the Renewable Fuel Standard” and request for stakeholder comments. AAJ, with members in the United States, Canada and abroad, is the world’s largest trial bar. It was established in 1946 to safeguard victims’ rights, strengthen the civil justice system and promote injury prevention. AAJ is an advocate for numerous consumers, families, and state and local governments who have suffered serious personal, property and environmental damage as a result of dangerous and defective fuel products.

In the Committee’s recent notice regarding a series of white papers on the Renewable Fuel Standard (RFS), the Committee specifically asked stakeholders, “Should any changes include liability relief or additional consumer protections for addressing misfueling concerns?”

It is troubling that the Committee would even consider “liability relief” in its review of the RFS. Corporate immunity upends the very purpose of state product liability laws, placing consumers and the environment at greater risk of injury. Further, corporate immunity would violate the 10th amendment. The fact that industry groups are seeking corporate immunity evidences a serious concern that they are knowingly introducing a potential dangerous product into the American marketplace, most notably E15. Congress should work to protect American consumers, not help corporations evade accountability when their products harm consumers and damage the environment.

I. State product liability laws protect consumers by forcing accountability for dangerous products and deterring corporate wrongdoing

It is a fundamental principal of tort law that “one engaged in the business of selling or otherwise distributing products who sells or distributes a defective product is subject to liability for harm to persons or property caused by the defect.”¹

State product liability laws serve valuable and important purposes.² Most obvious, product liability laws provide compensation to consumers or other parties, such as state and local governments, who are injured through no fault of their own. Moreover, product liability laws have economic justification by addressing market flaws and creating economic efficiency.³ Indeed, product liability laws deter unreasonable and dangerous behavior, promoting safety by taking dangerous, defective products off the market and encouraging investments in safety.

History has shown us the importance of state product liability laws when it comes to defective fuel products, particularly our nation’s experience with methyl tertiary-butyl ether (MTBE), a fuel additive that caused leaks in underground storage tanks across the country, resulting in serious and costly drinking water pollution. After MTBE hazards were exposed, 25 states banned MTBE as a fuel additive. With the costs of MTBE clean-up in the billions of dollars,⁴ hundreds of states, local governments, public water utilities, and private citizens brought lawsuits under state product liability law seeking compensation to clean up their drinking water supplies. These lawsuits ensured that the responsible corporations, not taxpayers, paid for the cost of MTBE contamination.

Corporate immunity, which is implied by the Committee’s question on “liability relief,” allows sellers of defective fuel products to avoid legal accountability. Corporate immunity would leave injured citizens, states, and local governments without a remedy when such defective or dangerous products cause serious harm. Further, corporate immunity undermines the incentive to produce safe fuel products, allowing market failures to continue and ultimately leaving consumers and the environment at greater risk of injury.

¹ RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY, § 1, *Liability of Commercial Seller or Distributor for Harm Caused By Defective Products* (2012).

² See generally, Thomas O. McCarty, Sidney Shapiro and Nicholas Vidargas, *Sweeping Corporate Immunity for the Fuel Industry: the Next Front in the ‘Corporate Accountability’ Wars*, CENTER FOR PROGRESSIVE REFORM (2013).

³ Sidney Shapiro, Ruth Ruttenberg and Paul Leigh, *The Social Costs of Dangerous Products: An Empirical Investigation*, 18 CORNELL J. OF L. & PUB. POL’Y 775, 776-78, (2009).

⁴ In 2003, the U.S. Conference of Mayors, which opposed the MTBE liability waiver that was being considered at that time, estimated that such cleanups could cost \$29 billion. See, Laura Parker, *Energy Bill Provision May Stop Suits Over Water Polluted by Gas Additive*, USA TODAY (Sept. 30, 2003).

II. The “Domestic Fuels Protection Act” and other forms of corporate immunity endanger American consumers.

In the 112th Congress, the Committee’s Subcommittee on Environment and the Economy began consideration of the Domestic Fuels Protection Act (DFPA), a bill that granted sweeping corporate immunity to the entire chain of commerce of fuel and fuel additives. The immunity provided by this bill is unprecedented in that it would apply to all types of fuel and fuel additives, literally thousands of potentially toxic compounds, including E15 and MTBE. Further, this immunity extended to every entity, both foreign and domestic, on the fuel chain of commerce, including entities that design, manufacture, sell, distribute or store fuel, fuel additives, blend stocks, vehicles, engines, and non-road equipment.

Despite broad opposition to this bill by numerous consumer, environmental and public interest groups,⁵ DFPA was supported by a coalition of fuel industry groups, including the American Petroleum Institute (API) and the Renewable Fuels Association.⁶ DFPA appears to have been introduced at this coalition’s behest.

By seeking such corporate immunity, it raise serious concerns that these industry groups are knowingly placing a dangerous product into the American marketplace and are preemptively seeking ways to evade accountability for their products. Indeed, this fear is acknowledged by some of the industry groups in this coalition. The API readily acknowledged this potential safety hazard with one of the DFPA’s most obvious fuel to be immunized: E15, a fuel blend that contains up to 15% ethanol. Recently, a representative from the API stated that new research has concluded that:

“putting E15 in America’s gas tanks could damage millions of vehicles and put motorist safety at risk. . . E15 could cause erratic or misleading fuel gauge readings or cause faulty check engine light illuminations. It could also cause critical components to break down and stop fuel flow to the engine. Failure of these components could result in breakdowns that leave consumers stranded on busy roads and highways.”⁷

⁵ Some of these groups include: AAA, Alliance for Justice, Center for Auto Safety, Center for Justice & Democracy, National Consumers League, Public Citizen, U.S. PIRG, Clean Air Task Force, Clean Water Action, EarthJustice, Environment America, Environmental Working Group, Friends of the Earth, Greenpeace, Natural Resources Defense Council, Sierra Club and Southern Environmental Law Center.

⁶ Letter from American Fuel & Petrochemical Manufacturers, American Petroleum Institute, Growth Energy, National Association of Convenience Stores, NATSO, OPEI, Petroleum Marketers Association of America, Renewable Fuels Association and SIGMA, to Representatives Shimkus, Ross, Sullivan and Peterson, “Re: Domestic Fuels Act of 2012” (March 29, 2012) (on file with author).

⁷ CQ Transcripts, *American Petroleum Institute Holds News Teleconference on Ethanol Blends* (January 29, 2013) (quote by Bob Greco, Downstream Group Director of the American Petroleum Institute); available through subscription only (on file with author).

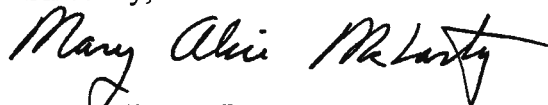
It is dangerous that Congress would even consider “liability relief,” such as the DFPA, in light of evidence from industry groups -- and corresponding actions from such groups -- that indicates that such fuel products are potentially dangerous and could “put motorists at risk.” Such proposals will only serve corporate interests, allowing corporations to profit from dangerous and defective products while leaving consumers and the environment at increased risk of harm and without a remedy when such harm does occur.

III. Congress cannot provide such “liability relief” without violating the 10th Amendment.

It is worth noting that the DFPA and other forms of “liability relief” would violate the 10th Amendment and disrupt the careful balance of federalism in our democracy. Congress cannot immunize corporations without preempting state product liability laws. Product liability law is exclusively a state law issue, and the rights of states to maintain their own unique tort law is preserved in the 10th Amendment. There is no federal product liability law, and federal preemption of state product liability law would usurp the Constitutional right of states and localities to regulate their own communities.

AAJ appreciates this opportunity to submit comments in response to the Committee’s notice of a “White Paper Series on the Renewable Fuel Standard” and request for stakeholder comments. We sincerely hope that the Committee fully examines this issue and does not increase the risk of harm to American consumers and the environment by considering “liability relief” for any fuel or fuel additive. If you have any questions regarding these comments, please contact Kate deGravelles, AAJ’s Federal Relations Counsel, at (202) 944-2862 or John Bowman, AAJ’s Director of Federal Relations, at (202) 944-2884.

Sincerely,

A handwritten signature in black ink that reads "Mary Alice McLarty". The signature is fluid and cursive, with the first name "Mary" and last name "McLarty" being clearly legible.

Mary Alice McLarty

President

American Association for Justice



1. To what extent was the blend wall anticipated in the debates over the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007?

All stakeholders, including but not limited to Congress, refiners, automakers, manufacturers of other engines, fuel distributors and retailers, and ethanol producers, understood that the 36 billion gallon Renewable Fuel Standard (RFS) by 2022 contained in EISA 2007 would necessitate changes to fuel, engines, and infrastructure to accommodate blends above 10 percent ethanol.

For certain interest groups who oppose ethanol to suggest otherwise, because they object to how the RFS provides for competition in the fuel market, is dishonest.

Because most of the transportation fuel consumed in the U.S. is gasoline and the RFS calls for annual increases in the use of renewable fuels in the overall transportation fuel mix, ethanol comprises the majority of the market growth under the RFS. While U.S. motor gasoline use was greater in 2007 than it is today, 36 billion gallons of renewable fuel use (mostly ethanol) by 2022 necessitates blends beyond E10 whether total gasoline use is 142 billion gallons, as was the case in 2007, or 130 billion gallons, as is the case today. Based on 2007 U.S. gasoline use, a 36 billion gallon RFS in 2022 represents 25 percent market share for renewable fuels, clearly piercing the “E10 blend wall.” Based on today’s gasoline use, the RFS represents 27 percent market share.

It is hard to imagine that sophisticated, multi-national, publicly-traded companies failed to appreciate the gravity of how the RFS would change the types of fuel we use in engines. Choosing not to adapt and instead intentionally working to undermine or repeal the RFS since that time shouldn’t be used as an excuse by Congress to penalize consumers who benefit from the RFS and other parties who have taken every step to comply with the law since its enactment.

2. What are the benefits and risks of expanded use of E-15 to automakers, other gasoline powered equipment makers, refiners, fuel retailers, and others involved in the manufacture and sale of gasoline and gasoline-using equipment?

Once again, automakers, manufacturers of other “gasoline-powered” equipment, refiners, and fuel retailers have all known since EISA 2007 contained a 36 billion gallon RFS by 2022 that higher blends of ethanol would be necessary. If there were legitimate risks or problems for automakers, refiners, fuel retailers, or others from the use of E15, these parties would have provided credible evidence of such during the lengthy comment period the U.S. Environmental Protection Agency (EPA) allowed and during testing of E15 with Department of Energy officials. It is important for the Committee to recognize “other gasoline powered equipment makers” are expressly prohibited by EPA from using E15.

The primary benefit of expanded E15 use is enabling consumers the option to purchase a more affordable and cleaner blend of fuel than straight gasoline. While automakers and other engine manufacturers may have needed to make adjustments to accommodate this new fuel, they benefit by making a product that operates on the fuels of the future. Consider that E10 was once a “new fuel” that automakers, some politicians, and certainly refiners initially resisted. At first, automakers refused to warranty some vehicles on E10, but eventually made adjustments to the point that every car sold in America today covers and/or recommends the use of E10. The same goes for all small engines, including boats and other non-road vehicles. All small engines sold in the U.S. today are approved to use E10. As refiners began to recognize they could profit by purchasing a lower cost and higher octane fuel in ethanol, and blend it with gasoline to make E10, infrastructure adjustments were made in the fuel distribution system. Retailers quickly offered E10 blends because consumers found the fuel worked well in their cars and saved them money compared to straight gasoline. This same evolution will occur with E15.

3. What are the risks of the introduction and sale of E-15 to the owners of pre-2001 motor vehicles, boats, motorcycles, and other gasoline-powered equipment not approved to use it? Are there risks to owners of post-2001 vehicles? How do these risks compare to the benefits of the RFS?

Federal law prohibits the use of E15 in pre-2001 motor vehicles and all small engines, not based on any evidence of engine failure, but rather based on the fact EPA and DoE did not test these engines on E15. As long as owners of these non-approved engines look at and adhere to the warning labels and obey the law, there are no risks. There are no proven risks to owners of 2001 and newer passenger vehicles.

For information on retail warning labels, see Attachment A.

We recognize change may be hard for oil companies and engine manufacturers, but that isn't justification for resisting change. For far too long in the U.S., leading oil, auto, and chemical companies benefited from the status-quo of “leaded” gasoline. They paid for their own research to defend lead in gasoline and to suggest it didn't pose a problem. It wasn't until 1969, when Dr. Clair Patterson of the California Institute of Technology finally exposed tetraethyl lead for the health hazard it was, that all of the sham lead science was exposed, and the effort to ban lead began. And even that took an additional 17 years to complete before we had what is known as “unleaded” gasoline. This same resistance to change is rooted in foot dragging on the part of certain industries related to E15.

EPA requires ethanol producers and fuel marketers to follow strict guidelines and register with the Agency to be approved to sell E15. Ethanol producers and fuel marketers must also submit a misfueling mitigation plan (MMP) to EPA and receive approval of the MMP before they are legally allowed to sell E15. On March 16, 2012, EPA approved the misfueling mitigation and education plan submitted by the Renewable Fuels Association, which parties can use when applying for approval. Misfueling mitigation plans ensure the proper legal and practical steps are taken to prohibit the use of E15 in vehicles from model year 2000 and older, and all boats, motorcycles, and non-road gas powered equipment such as lawn mowers and garden equipment.

The misfueling mitigation plan calls for fuel samples to be taken from stations to verify that E15 is being properly blended and identified at retail sites.

4. What is the likely impact, if any, of the blend wall on retail gasoline prices?

Any “wall” which limits the ability for lower-cost ethanol to be blended with gasoline and sold to consumers will likely increase retail gas prices. That’s why consumers benefit when the RFS is allowed to work as intended and provide opportunities affordable fueling options for motorists.

With gasoline prices on the rise, there’s even more reason to maintain the RFS. Today, American families are spending more on gasoline than in nearly 3 decades. But blending ethanol with gasoline helps temper the pain at the pump. Ethanol is approximately 40 cents per gallon cheaper than gasoline at the wholesale level and has been as much as \$1.20 less expensive in the last 12 months. Economists at the University of Wisconsin and Iowa State found that ethanol reduced wholesale gasoline prices by an average of \$1.09 across the U.S. in 2011. This decreased household spending on gasoline by \$1,200 per year. The economists found the price reduction was even more pronounced in Petroleum Administration for Defense District (PADD) II, where ethanol decreased wholesale gas prices by an average of \$1.69 in 2011. Ethanol saved more than 70 cents per gallon in PADD I (East Coast) and PADD III (Gulf Coast) wholesale gas prices.

Consumers can choose more affordable ethanol blends thanks to the RFS. E10, which is approved for all cars on the road, is currently saving consumers 4 cents per gallon compared to unleaded gasoline – a savings of nearly \$450 million per month nationwide. Three-fourths of U.S. automobiles can use E15 and save 6 cents per gallon compared to unleaded gasoline at today’s prices.

According to a study by Louisiana State University, gasoline prices are reduced by six cents for each billion gallons of ethanol added to the supply.¹ Based on their analysis, in 2011, U.S. ethanol production saved Americans 83 cent per gallon on wholesale gasoline prices.

Congress ought to recognize it is in the interest of the oil companies to keep the E10 blend wall. It ensures their market share for a higher priced product that leads to record profits for them and U.S. consumers paying more at the pump. It keeps the marketplace anti-competitive which is how they want it.

5. What is the timing of the implementation challenges related to the blend wall? Will some entities face difficulties earlier than others?

The premise of this question, like others which have been posed in this White Paper, appears to misread why Congress enacted the RFS as part of EISA 2007. The purpose of the RFS was not to continue our status-quo reliance on fossil fuels, it was not to make life comfortable for oil

¹ Marzoughi, H. and Kennedy, P. L. (2012). The impact of ethanol production on the U.S. gasoline market. No 119752, 2012 Annual Meeting, February 4-7, 2012, Birmingham, Alabama, Southern Agricultural Economics Association. Retrieved from <http://EconPapers.repec.org/RePEc:ags:saea12:119752>.

refiners or other stakeholders, it was to dramatically improve and change the kind of fuels produced and used in the U.S. The first authors of RFS legislation in Congress understood these goals, despite implementation challenges that could occur.

Consider this quote² from former U.S. Senator Richard Lugar (R-IN), one of the authors of the first RFS legislation in Congress, during a speech he delivered on August 29, 2006, at an energy summit held at Purdue University. “My intent here is not to punish the oil companies. As a Senator who has favored new drilling and other initiatives designed to help the oil companies produce more domestic oil, I am suggesting that they need to alter their thinking. In the best circumstances, they would embrace ethanol and work hard to diversify their investments and operations - partly for the good will they would receive from Congress and the public - but also to prepare for the coming decades of greater American prosperity and security. If the mandate (RFS) can be effectively linked to the increasing availability of ethanol, so much the better. But to achieve our larger goal, we must be prepared to tolerate a certain level of disconnect between cars, pumps, and ethanol in the early stages of this effort. Some pumps may be underutilized at first, but this cannot be an excuse not to move forward.”

We also refer the Committee to this quote³ in the *New York Times* in 2006 by U.S. Senator Chuck Schumer (D-NY) on the purpose of the RFS. “Such a mandate is necessary to push major oil companies that own many gas stations to install ethanol pumps, said Charles E. Schumer, Democrat of New York. “We believe we have to push the country into alternative fuels whether oil companies like it or not.”

The cost for most retail stations to “upgrade” their fueling equipment to handle E15 is as little as \$0.00, up to a few thousand dollars – but nowhere near the billions of dollars suggested by the oil industry. The Underwriters Laboratories (UL) specification for pumps, hoses, nozzles, and all the interior parts of a gasoline dispenser requires them to be tested with 15% alcohol/ethanol, and the 3 companies that manufacture 95% or more of the pumps used in the United States guarantee their pumps for use with E15 and have for nearly ten years. [Gilbarco](#) and Dresser Wayne warranty all of their new pumps for E15 or E25. Gilbarco has a retrofit kit that would upgrade a dispenser for up to 25% ethanol at a cost of about \$300 for parts, and probably another \$300 for labor. A company called [Davis Airtech](#) will upgrade meters to E85 compatibility for less than \$1000. The [Petroleum Equipment Institute](#) has 22 pages of equipment that is compatible with E15 and E20 and higher blends [here](#).

Tanks are also compatible and have been for some time, as shown on these two manufacturers association websites:

² The Honorable Richard Lugar (2006). Remarks on an expanded Renewable Fuel Standard during a speech at an Energy Security Summit at Purdue University. August 29, 2006. Retrieved from: <http://www.insideindianabusiness.com/newsitem.asp?ID=19424>

³ The Honorable Charles Schumer (2006). Quote in New York Times. Retrieved from http://www.nytimes.com/2006/12/10/business/yourmoney/10energy.html?_r=0

<http://www.steeltank.com/Portals/0/media/Steel%20Facts%20No.%202-Biofuels%20Compatible%20v.%2001.07.12.pdf>

<http://www.fiberglassstankandpipe.com/ethanol.htm>

The Fiberglass Tank and Pipe Institute refers to UL1636 which indicates tanks are certified for gasoline and ethanol blends which are defined as “blends of gasoline and ethanol up to 100% ethanol.”

In addition to knowing since at least 2007 that higher blends of ethanol would be required in gasoline, refiners have been able to benefit from a Renewable Identification Number (RIN) credit banking and trading system to comply with the RFS.

When RFS2 was enacted as part of EISA 2007, refiners were concerned that there might be times there would not be enough ethanol produced to meet the annual Renewable Volume Obligations (RVOs), and they demanded a credit trading system. They wanted to be able to carry over credits from year to year for purchasing more ethanol than required, and they wanted to be able to sell their “extra” credits to other refiners that were unable to comply with their RVOs. In response EPA created RINs, credits which serve as the currency of the RFS. Also at the request of oil companies, EPA gave RINs a two-year shelf life, meaning a refiner could use a RIN for RFS compliance in the year the RIN was generated or the following year. It is also important to note that EPA prohibited ethanol companies from separating RINs from ethanol gallons to ensure that oil companies were in control of the RIN trading process.

Refiners can comply with the RFS by purchasing ethanol (with a RIN attached for free) or purchasing a detached RIN from a third party who previously blended more ethanol than required. RINs were the refiners’ idea and are intended to give them flexibility to comply with the RFS. Different refiners will meet the “E10 blend wall” at different times given their compliance with the RFS, but RINs and the availability of E15 and E85 provide opportunities for them.

6. Could the blend wall be delayed or prevented with increased use of E-85 in flexible fuel vehicles? What are the impediments to increased E-85 use? Are there policies that can overcome these impediments?

Other options, such as the use of midlevel blends of ethanol and E85 in Flexible Fuel Vehicles (FFVs), have been available to automakers and others to ensure compliance with higher blends of ethanol in gasoline since 2005 and 2007. With the right policy incentives and resolve on the part of automakers and other stakeholders, a commitment to more FFVs and blender pumps dispensing E85 and other midlevel blends such as E20 and E30 could erase the so-called blend wall.

Because ethanol costs less than gasoline, E85 can be blended at a cost much lower than straight gasoline or even E10. At current ethanol and gasoline rack prices, E85 would cost between 40

and 45 cents less than gasoline. The value of RINs changes E85 economics dramatically. An independent marketer selling E85 can – at current RIN prices – earn an additional 55 to 60 cents from the sale of RINs, making E85 a dollar per gallon less expensive than gasoline. That more than offsets any mileage loss from E85, even if the retailer decides to keep a higher percentage of the profits to offset any increased equipment costs.

A refiner could increase its own “blend wall” to 11 percent by increasing E85 sales to only 1.17 percent of its total gasoline sales. Nationally, sales of 100 gallons per FFV would create enough RINs to offset 1 percent of the annual ethanol requirement in the RFS.

Another simple and quick way to overcome the E10 blend wall is for less foot-dragging and more compliance with safe and legal options such as E15 use in 2001 and newer vehicles and continued E85 use in FFVs.

Legislation enacted in the 1970s and 1980s authorized an incentive under the CAFE program for the production of FFVs. These incentives proved effective. In fact, U.S. automakers, including General Motors, Ford, and Chrysler, committed to build 50% of their fleet as FFVs by 2012 and later model years. To their credit, U.S. automakers have fulfilled this promise. However, because of a per-automaker fleet-wide credit cap, the program hasn’t incented 100% production of FFVs.

EISA 2007 not only provided for a 36 billion gallon RFS by 2022, but also extended the period of availability of the FFV credits. However, the law began annually reducing the amount of FFV credits that can be used to help achieve compliance with the CAFE standards, eventually phasing them out by model year 2019. Current CAFE-GHG rules are supposed to provide guidance and incentives (albeit less meaningful than in the past) for continued FFV production.

7. Is E-15 misfueling unavoidable? Are there lessons from the labeling and dispensing of diesel, E-85 and other fuels that prevent their misfueling that can also be applied to E-15? What specific actions are companies taking to address potential misfueling concerns under MMPs?

E15 misfueling is avoidable. Coincidentally, every day in the U.S. people misfuel their vehicles with either gasoline or diesel fuel, and yet Congress and oil companies have not expressed significant concern. But when a competitor to petroleum is involved, such as a blend of E15 or E85, suddenly misfueling concern arises. Given the strict labeling requirements for E15, and given the fact that E85 misfueling has been virtually non-existent, we are confident E15 misfueling is avoidable. Refer to answers to question 3 and Attachment A.

8. Can blend wall implementation challenges be avoided without changes to the RFS? Is the existing EPA waiver process sufficient to address any concerns? If the RFS must be changed to avoid the blend wall, what should these changes entail? Should any changes include liability relief or additional consumer protections for addressing misfueling concerns?

In short, yes, through oil companies making E85 and E15 blends available to consumers.

There is no need or rationale to modify the RFS to solve the so-called blend wall problem. The RFS costs taxpayers nothing and is working the way Congress intended. The RFS creates the pathway for overcoming the blend wall, and EPA's approval of blends such as E15 in cars built the last 13 years (representing approximately 75% of the cars on the road today) and E85 or midlevel blend use in the 15 million FFVs vehicles in the U.S. provides the means by which to overcome the blend wall if obligated parties cooperate. Legislatively modifying the RFS because oil companies don't want to comply with the law of the land is nothing more than rewarding a petulant toddler for not eating their vegetables.

9. Have the 2017 and Later Model Years Light Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy standards for cars and light trucks changed the implementation outlook of the RFS?

Successful fulfillment of the new CAFE-GHG standards depends upon keeping the RFS intact. Automakers see the RFS and CAFE-GHG rules as synergistic pieces of an integrated system, based on the recognition that U.S. transportation fuels policy should strive to preserve a balance between vehicles and the fuels that power them.

In order to comply with the CAFE-GHG rules over the long term and put higher mileage vehicles on the road, automakers will change the internal combustion engine; it will become downsized, it will rely upon technologies such as turbo-charging and direct-injection, and it will utilize higher compression ratios. Making these changes to an internal combustion engine demands that fuel contains significantly more octane than today's gasoline. The cleanest and most affordable source of octane on the planet is ethanol. Automakers have indicated to us that a higher octane fuel, with a significantly higher ethanol concentration than E10 and E15, will be required to help them comply with CAFE-GHG rules.

10. What other methods, including the use of drop-in fuels, are available to industry to ease the challenge posed by the blend wall?

So-called "drop-ins" still have limits on the percentage of these fuels that can be blended with gasoline or diesel, therefore abandoning ethanol and turning towards these drop-in fuels, which aren't commercially available today in significant volumes, doesn't ease a blend wall problem in the near term. In fact, advanced and cellulosic *ethanol* is what we will be coming on line next in the commercialization on advanced biofuels. Breaking through the blend wall is critical not only to consumers and existing renewable fuel producers, but also to the advanced biofuel sector.

11. What are the impacts on renewable fuel producers if the RFS is changed to avoid the blend wall?

There's no market or policy rationale for changing the RFS. As stated earlier, it wasn't enacted to protect the profitable status-quo of oil companies, Congress adopted the RFS to provide consumers access to cleaner and better alternatives to oil and because the transportation fuel market isn't free or fair. It would be nice if free market principles cleared the path to more ethanol use. However, let's recall what a truly free market does. It rewards low-cost alternatives. It promotes innovation. And a free market fosters competition. Despite the fact that ethanol is the low-cost alternative and ethanol producers are innovating and becoming more efficient, left to their own devices, oil companies wouldn't use as much as called for under the RFS because they control the market. Reducing or repealing the RFS would not only penalize renewable fuel producers by taking away the only tool to help level the playing field, it would also harm consumers because they would not have access to lower cost and cleaner alternatives to oil. Finally, it would significantly stifle the investment climate for advanced and cellulosic projects, potentially stalling their development which plays directly into the oil company playbook of maintaining their market share.

Attachment A

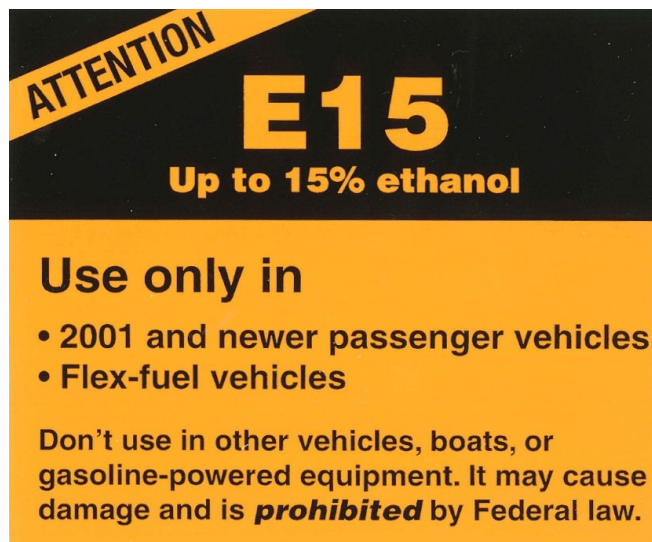
REQUIRED FUEL LABELS (ACTUAL SIZE)



Owners' manuals for small engines and auto-makers have required engine owners to use gasoline with an octane rating of 87 or higher. This label is the only indication customers would have that the fuel they are using meets that requirement, and engine builders have been satisfied with it.



This label is required on E85 dispensers. A Federal Trade Commission report said the label was successful given the fact that reports of unintentional misfueling "have been virtually nonexistent." The Alliance of Automobile Manufacturers and National Automobile Dealers Association both supported the rule.



EPA requires this label (150% larger than the above labels) to tell consumers who can and cannot use E15 and to stop unintentional misfueling.



April 3, 2013

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

The Honorable Henry Waxman
Ranking Member
Committee on Energy and Commerce
2322A Rayburn House Office Building
Washington, DC 20515

Dear Chairman and Ranking Member:

The American Motorcyclist Association appreciates the opportunity to respond to relevant questions from the *Renewable Fuel Standard Assessment White Paper*.

Per your request, please see the AMA's responses to the following questions:

2. What are the benefits and risks of expanded use of E15 to automakers, other gasoline powered equipment makers, refiners, fuel retailers, and others involved in the manufacture and sale of gasoline and gasoline-using equipment?

AMA response:

The EPA's decision to allow E15 into the marketplace will impact every American who owns a car, lawnmower, boat, snowmobile, motorcycle or all-terrain vehicle. Manufacturers have stated that use of E15 may void warranties. In off-road engines, the effects can even be dangerous for users.

With the EPA using only one test to determine if E15 is safe for vehicles before granting a waiver, the AMA urges the agency to allow for an independent scientific study by the National Academy of Sciences to occur. We also request that motorcycles and ATVs be included in such study.

3. What are the risks of the introduction and sale of E15 to the owners of pre-2001 motor vehicles, boats, motorcycles, and other gasoline-powered equipment not approved to use it? Are there risks to owners of post-2001 vehicles? How do these risks compare to the benefits of the RFS?

AMA response:

In October 2010, the EPA approved the use of E15 in model year 2007 and newer light-duty vehicles (cars, light-duty trucks and medium-duty passenger vehicles). Then, in January 2011, the EPA added model year 2001-2006 light-duty vehicles to the approved list.

No motorcycles or ATVs are currently on the list.

The AMA has expressed concerns about E15 being mistakenly used and damaging engines in motorcycles and ATVs, and about the continued availability of gasoline that has no ethanol, or gasoline with only a 10 percent blend, that is safe for use in motorcycles and ATVs.

7. Is E15 misfueling unavoidable? Are there lessons from the labeling and dispensing of diesel, E85 and other fuels that prevent their misfueling that can also be applied to E15? What specific actions are companies taking to address potential misfueling concerns under MMPs?

AMA response:

On Feb. 7, the EPA posted a new option for retailers on its website's "E15: Misfueling Mitigation Plans" page to try to avoid misfueling by consumers.

Under the new option, retailers who use a blender pump to sell E15 and E10 fuel through the same hose must also have a separate E10/E0 fuel pump. Those retailers would be required to have a label on the blender pump that reads: "Passenger Vehicles Only. Use in Other Vehicles, Engines and Equipment May Violate Federal Law." Retailers would also be required to have signs indicating the location of the dedicated E10-or-lower fuel pump. There would be no minimum-fuel-purchase requirement at that pump.

The AMA can only imagine how many motorists and motorcyclists will be lining up at that single pump to get E10-or-lower fuel.

Furthermore, a survey by the National Marine Manufacturers Association found 35 percent of the retailers in non-compliance with the current labeling requirements. The AMA believes that enforcement will be more difficult with sequestration.

The AMA does not believe this new misfueling mitigation plan will provide clarity to our members and the general public. Another label on a blender pump that already has many labels will not suffice and could be easily overlooked. The plan calls for no physical barriers in the fueling nozzle/receptacle as was provided for when the nation went from leaded to unleaded fuel. History tells us that, even with these physical barriers in place, misfueling still occurred.

Retailers who want to sell E15 also have the option of having a dedicated E15 pump or hose, or a pump that dispenses E15 and higher ethanol blends through a single hose. If a blender pump dispenses multiple fuels that include E15 and higher ethanol blends, the EPA may require a minimum purchase requirement.

Chairman and Ranking Member
April 3, 2013
Page Three

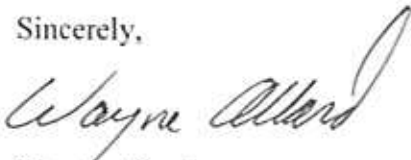
Last year, the AMA told the EPA that with E15 now coming into the market, our members who make a concerted effort to fuel their motorcycles or ATVs with E10-or-less fuel, may unknowingly refuel with residual E15 left in a blender-pump hose. A blender pump dispenses different fuel blends through the same hose, such as E10 and E15. When a customer buys E15, as much as a third of a gallon of residual E15 is left in the hose, which can inadvertently get into the next customer's vehicle while fueling with E10.

The EPA said: "In an effort to address this potential misfueling issue, EPA approved an industry-submitted [approach] that requires a minimum purchase of four gallons from blender pumps that dispense both E10 and E15 from the same hose and nozzle. Such an approach would prevent misfueling by diluting any residual E15 left in the hose from the previous sale of E15."

However, the AMA objected to this misfueling mitigation plan because our members' fuel tanks' capacities are normally two-to-three gallons on average.

Again, thank you for the opportunity to answer questions from the *Renewable Fuel Standard Assessment White Paper*. If you have any questions, please do not hesitate to contact me by phone, (202) 742-4301, or by email, wallard@ama-cycle.org.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne Allard". The signature is fluid and cursive, with a large, stylized "W" and "A".

Wayne Allard
Vice President, Government Relations



Marty Durbin
Executive Vice President

Government Affairs

1220 L Street, NW
Washington, DC 20005-4070
USA
Telephone 202-682-8400
Fax 202-682-8416
Email durbinm@api.org
www.api.org

April 5, 2013

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
House of Representatives
2125 Rayburn House Office Building
Washington, DC 20515

The Honorable Henry Waxman
Ranking Member
Committee on Energy and Commerce
House of Representatives
2125 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Upton and Ranking member Waxman,

API appreciates the opportunity to respond to your questions in the Committee on Energy and Commerce white-paper examining the challenges of the ethanol blendwall.

The Renewable Fuel Standard program is irretrievably broken, and is poised to do significant harm to consumers, the economy, and the nation's fuel supply system. When Congress passed the Energy Independence and Security Act in December of 2007, EIA was projecting increasing gasoline demand into the future. Instead, gasoline demand has fallen and such reductions coupled with the annually increasing biofuel mandates accelerated the blendwall and significantly increased its severity. The RFS mandate is unworkable and API has joined a chorus of diverse interests calling on Congress to repeal it.

Our primary concern with the RFS is the E10 blendwall. Neither E15 nor E85 are viable compliance options:

- Consumers have rejected E85 in the marketplace, and our companies don't own the retail facilities that require financial investments necessary to distribute the fuel.
- E15 not only has infrastructure compatibility and long term engine durability problems, but has more recently been shown to cause vehicle fuel system breakdowns.¹
- E85 and E15 are suitable only for flex-fuel vehicles; and a small fraction of the newest vehicles designed and warranted to tolerate E15. EPA acted prematurely and improperly in approving E15, and the waivers should be rescinded.

The increasing price of renewable fuel credits could be an indication that refiners are reacting to the E10 blendwall. This sudden, added cost of producing gasoline and diesel fuel could have profound impacts on the marketplace, potentially restricting fuel imports and encouraging fuel exports. A recent study by NERA Economic Consulting, an internationally respected economic analysis firm found that,

¹ CRC Report No. 664, "Durability of Fuel Pumps and Fuel Level Senders in Neat and Aggressive E15," January 2013, and CRC Project CM-136-09-1B, "Intermediate-Level Ethanol Blends Engine Durability Study," April 2012

by 2015, the economic consequences of continued implementation of RFS would be severe, including:²

- Transportation fuel cost increases and fuel supply rationing with negative impacts that ripple through the economy.
 - 30 percent rise in the cost of gasoline,
 - 300 percent increase in the cost of diesel.
- GDP decreases by \$270 billion in 2014 and decreases by \$770 billion in 2015.
- American household average consumption decreases by \$1,300 in 2014 and by \$2,700 in 2015.
- American worker take-home pay decreases by \$27 billion in 2014 and by \$580 billion 2015.

Ethanol and other renewable fuels are an important piece of our transportation fuel mix. But the federal RFS mandate is ill-conceived and continues to be inflexible. As a result, NERA projects that it will cause real-world damage. Because of the severe impacts predicted by NERA, API believes that Congress and the administration should act immediately.

Again, we appreciate the opportunity to provide these responses. If you have any questions or concerns, please don't hesitate to contact us.

Sincerely,



Marty Durbin
Executive Vice President

API is a national trade association that represents all segments of America's technology-driven oil and natural gas industry. Its more than 500 members – including large integrated companies, exploration and production, refining, marketing, pipeline, and marine businesses, and service and supply firms – provide most of the nation's energy. The industry also supports 9.2 million U.S. jobs and 7.7 percent of the U.S. economy, delivers \$86 million a day in revenue to our government, and, since 2000, has invested over \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives.

² NERA Economic Consulting, "Economic Impacts Resulting from Implementation of RFS2 Program", October, 2012.



**Responses to the House Energy and Commerce Committee Questions for
Stakeholder Comments**

**White Paper Series on the Renewable Fuels Standard: Blendwall/Fuel
Compatibility Issues**

Submitted By

American Petroleum Institute

1220 L Street Northwest

Washington, DC, 20005

April 5, 2013

API Responses to House Energy and Commerce Committee RFS Questions

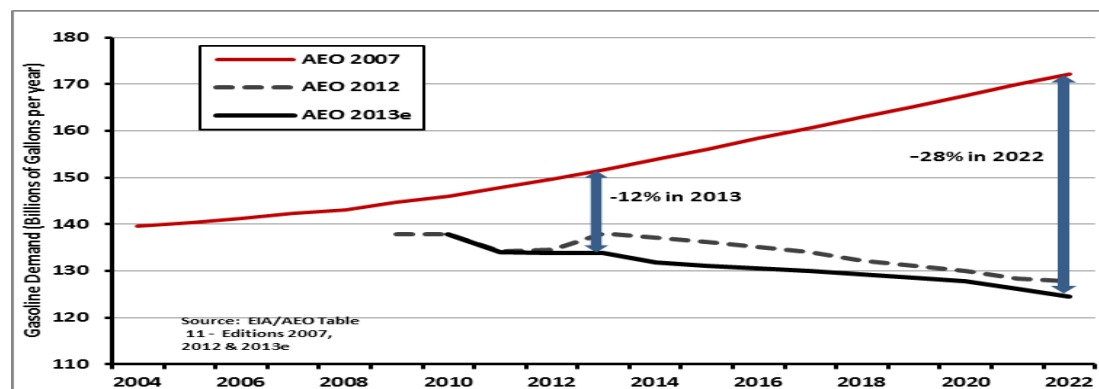
API believes that the RFS is irretrievably broken, and should be repealed. It requires blending of ethanol in gasoline at levels much higher than the 10% limit used in the design, certification, and warranties of the vast majority of vehicles and fuel retail infrastructure to date.

1. To what extent was the blend wall anticipated in the debate over the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007?

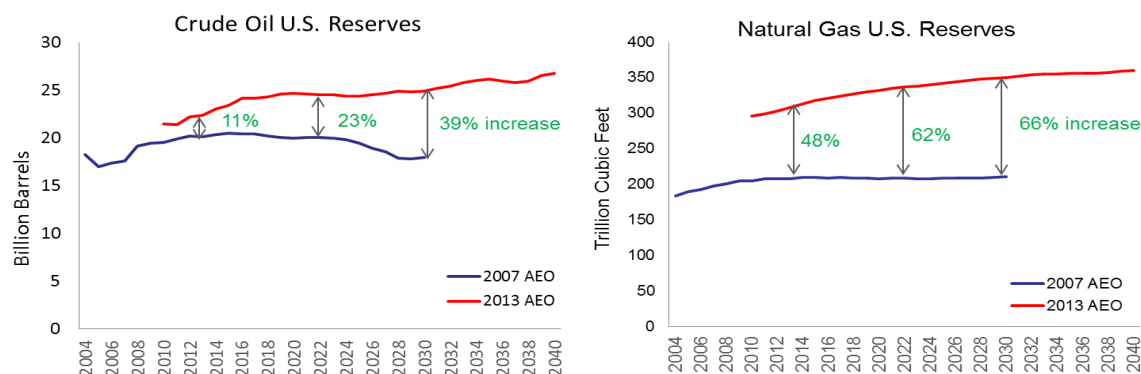
The blend wall was not an issue under the RFS enacted as part of the Energy Policy Act of 2005 as the renewable fuel mandate was limited to 7.5 billion gallons. The blend wall only becomes an issue when the mandated volumes exceed levels compatible with vehicles and infrastructure – i.e., 10 volume percent ethanol. In 2013, that occurs at approximately 13.3 billion gallons of ethanol.

The mandates enacted as part of the Energy Independence and Security Act of 2007 are a different matter as the mandated levels exceed levels compatible with vehicles and infrastructure. The RFS as passed in 2007 was based on a forecast of rising U.S. fuel demand. It is clear now that forecast was way off the mark. In fact, the demand for gasoline has steadily declined since the laws were passed.

In its most recent 2013 Annual Energy Outlook early release (AEO2013er), EIA is projecting gasoline demands for calendar years 2013 and 2022 that are 12% and 28% lower, respectively, versus what it was anticipating in 2007 (AEO2007) when the EISA2007 was enacted (as shown in the chart).



When combined with recent significant increases in US domestic oil and gas production, the overall context and outlook for implementing the RFS has indeed changed relative to the environment in which Congress substantially expanded the trajectory of RFS mandated biofuel volumes back in 2007. This has made an aggressive RFS unnecessary to meet our energy security needs. The charts below compare U.S. crude oil and natural gas reserves projected by EIA in 2007 and 2013 – note the very significant increases in the volumes!



EPA was made aware of the ethanol blend wall in a presentation (Attachment 1) that was given by Marathon Petroleum at an EPA Mobile Sources Technical Review Subcommittee in May of 2009 (Note that EPA did not finalize the RFS regulations mandated by the 2007 EISA until well into 2010). In this presentation, various blend walls and timing concerns were discussed. Since this presentation, EPA has not taken any steps at its disposal to address the blend wall. Instead of addressing the blend wall, EPA issued an E15 waiver in violation of and without following Clean Air Act requirements and has continued to propose aspirational cellulosic mandates in violation of recent Court decisions.

2. What are the benefits and risks of expanded use of E-15 to automakers, other gasoline powered equipment makers, refiners, fuel retailers, and others involved in the manufacture and sale of gasoline and gasoline-using equipment?

Study after study shows that E15 poses significant risks to consumers, automakers, small engine manufacturers, refiners, fuel retailers, and those involved in the manufacture and sale of gasoline and the equipment they use to store and dispense gasoline. All of these entities have mutual customers to satisfy, and thus, fuels must be compatible with vehicle technologies, auto manufacturer recommendations, non-road equipment and the fueling infrastructure needed to distribute them. E15 constitutes a new transportation fuel and as such, required extensive research. As described in subsequent responses, this research has shown that E15 is not compatible with existing vehicles and infrastructure.

E15 blends increase the ethanol content of gasoline by 50%, well outside the range for which most US vehicles and engines currently in operation have been designed and warranted. Currently, the vast majority of vehicle owner manuals do not allow E15 use. No owner manuals prior to 2012 allow E15 usage except in flex fuel vehicles. Two companies are now allowing E15 starting with their 2012 or 2013 vehicle models, but not for prior model years. Future vehicles can be designed and manufactured to run on E15; but the problem is the premature, improper, and retroactive allowance of E15 in vehicles not designed for operation on fuels greater than E10. The auto industry's vehicle warranty views on E15 are summarized in responses to Congressman Sensenbrenner where they were unanimous in that warranties only cover up to 10% ethanol: http://sensenbrenner.house.gov/uploadedfiles/e15_auto_responses.pdf

The risk to non-road engines is significant. The Outdoor Power Equipment Institute (OPEI) has indicated that E15 is harmful to outdoor power equipment, boats and marine engines and other non-road engine products. They state, "[t]he fuel used for automobiles and other engine products would have to be divided, substantially increasing the risk for misfueling, significant engine damage and consumer hazard."¹

E15 also dramatically impacts gasoline service station infrastructure as it is incompatible with much of the retail gasoline station storage and dispensing equipment. Retailers choosing to sell E15 are required by OSHA and fire codes to use equipment certified by a nationally recognized testing laboratory such as UL, and EPA rules require that the equipment be proven compatible with E15. The incompatibility of E15 with much of the existing fuel storage and dispensing equipment will require significant investment at retail stations to eliminate safety and environmental risks for both consumers and workers.

API and DOE have conducted extensive test programs to determine the compatibility of existing fuel storage and dispensing infrastructure with E15. More than half of the tested equipment was incompatible with E15.

¹ <http://opei.org/epa-decision-to-permit-15-percent-ethanol-e15-in-gasoline-puts-consumers-and-equipment-at-risk-says-outdoor-power-equipment-institute/>

Ten research papers have been published on the effects of increasing the ethanol blend ratio to E15 from the current E10. A third-party consultant reviewed the research on [storage and dispensing infrastructure](#) and found:

- All gaskets, seals, and o-rings swelled, and most lost important qualities which could result in leaks (Oak Ridge National Laboratory).
- The National Renewable Energy Laboratory tested a number of samples of used and new service station equipment. On average, about half of the equipment failed the compatibility tests. Using E10 compatible equipment with E15 could result in a reduced level of safety due to leaking equipment.
- The GAO reported challenges related to E15 implementation, specifically stating that, “the vast majority of existing retail dispensers in the US are not approved for use with intermediate ethanol blends under OSHA’s safety regulations.” Further, GAO saw challenges with using existing equipment including costs of equipment upgrades, logistical limitations on the types of fuel a retailer may be able to sell, and legal uncertainty about whether existing dispensing equipment can be lawfully used with E15.
- Independent API testing found that many of the gaskets between the devices and piping failed after 30 days exposure to the test fuel.

The retail gasoline station owner must analyze the cost/benefit of upgrading their station infrastructure to offer E15 to customers who might be confused about which vehicles can use E15. And as noted above, studies show that more than 50% of retail gasoline infrastructure is not compatible with E15. Consequently, upgrading the station fuel storage and dispensing equipment can run from the thousands to hundreds of thousands of dollars depending on the age and type of equipment at the station.

Prior to 2010, there were no UL-listed fuel dispensers that were compatible with fuels containing more than 10% ethanol, and there are limited legal mechanisms for recertifying legacy/existing devices. Some states or local fire marshals have waived the fire codes and required additional inspection criteria, but they cannot waive the federal OSHA requirements.

The EPA requires that “owners and operators must use an UST system made of, or lined with materials that are compatible with the substance being stored in the UST system.” It continues, “If the UST owner and operator is not able to demonstrate that the UST system is made of materials that are compatible with the ethanol blend or biodiesel blend stored, according to 40 CFR 280.32, the UST owner and operator may not use the system to store those fuels.”

Further, there is no Stage II vapor recovery equipment that is certified for use with higher level blends of ethanol and it seems very unlikely that any company will submit equipment to the California Air Resources Board to certify their equipment on E15. CARB certifies this equipment for the entire country.

The station owner also has to determine if their bank, insurance company and the state underground storage tank (UST) trust fund will insure their station if they sell E15. These companies most likely will require the station to have equipment that meets the federal and state requirements for compatibility.

It is possible to install E15 compatible equipment at the retail station, but the owner must properly verify the UST system and dispensing equipment’s compatibility with mid-level ethanol blends. If their fuel storage and/or dispensing equipment is not compatible with E15, the station owner must evaluate the business case of investing additional funds to bring their infrastructure into compliance. The vast majority of the 156,000 gasoline stations are owned by independent businesses (not the major integrated oil companies). And about 58% of the stations are owned

by a person that owns a single store. So there are a lot of small businesses that would have to make business decisions on whether to sell E15.

In response to those who claim that E15 and E85 infrastructure compatibility is the responsibility of integrated oil companies, please consider the following statement from the Petroleum Marketers Association of America (PMAA) in a March 20, 2013 letter-to-the-editor to the Wall Street Journal:

"...Some ethanol advocates are claiming that major oil companies are blocking the market for E15 (15% ethanol, 85% gasoline). Advocates on both sides of the E15 issue are ignoring the most obvious barrier— retail infrastructure. There are 700,000 gasoline dispensers in use in the U.S. and probably fewer than 5,000 have been certified for E15. There are over 3,000 miles of underground piping systems that have not been certified as safe for E15 as well.

Who is going to pay to replace the dispensers and underground piping, which will cost some retailers hundreds of thousands of dollars? Over 94% of the gas stations in the U.S. are owned by independent businesses, and the major oil companies cannot order those retailers to replace dispensers and piping. The retail gasoline business is brutally competitive and the average retail outlet has an annual net profit of \$40,000.

The federal Treasury cupboard is bare, and it is very difficult to imagine hundreds of millions being appropriated to replace dispensers and underground piping. We have member companies who want to offer E15 but simply cannot make the numbers work."

In summary, a station owner has to weigh the cost of installing compatible equipment, if necessary to ensure they are in compliance with OSHA and EPA's requirements for compatibility, as well as complying with banking and insurance requirements, against any incremental revenue anticipated from selling E15. In that equation he/she must also consider the fact that most auto manufacturers have stated that the use of E15 may void the warranty. For example, the 2013 Nissan Altima owner's manual states, "Do not use E-15 or E-85 fuel in your vehicle. Your vehicle is not designed to run on E-15 or E-85 fuel. Using E-15 or E-85 fuel in a vehicle not specifically designed for E-15 or E-85 fuel can adversely affect the emission control devices and systems of the vehicle. Damage caused by such fuel is not covered by the NISSAN new vehicle limited warranty." As a second example, the 2013 Dodge Challenger owner's manual states, "DO NOT use gasoline containing Methanol or gasoline containing more than 10% Ethanol. Use of these blends may result in starting and driveability problems, damage critical fuel system components, cause emissions to exceed the applicable standard, and/or cause the "Malfunction Indicator Light" to illuminate."

3. What are the risks of the introduction and sale of E-15 to the owners of pre-2001 motor vehicles, boats, motorcycles, and other gasoline-powered equipment not approved to use it? Are there risks to owners of post-2001 vehicles? How do these risks compare to the benefits of the RFS?

There are significant risks to both pre-2001 and post-2001 motor vehicles as well as boats, motorcycles and gasoline-powered equipment:

Boats, motorcycles, small engines and pre-2001 motor vehicles: The risks of E15 to owners of boats, motorcycles, other gasoline-powered equipment and pre-2001 motor vehicles arise primarily because these vehicles and equipment were not designed to operate on gasoline containing ethanol in excess of 10% by volume. In fact, the risks were well-documented by EPA in its decision to issue a partial waiver. Broadly speaking, they include an elevated potential for: engine failures and malfunctions, fuel system component failures and malfunctions, and materials compatibility issues. For non-road vehicles and equipment, these concerns have been well documented in studies sponsored by the US Department of Energy (DOE). For instance, in November 2011, DOE released the results of two studies which showed significant problems with using E15 in outboard, stern drive and inboard marine engines. Results of the reports showed severe damage to engine components and an increase in fuel consumption relative to E0.^{2 3}

A previously issued DOE study indicated that operation of non-road engines on ethanol fuel blends would likely lead to both performance and safety problems.⁴ Unlike modern cars, small engines lack an oxygen sensor feedback control and are unable to compensate for higher oxygen content in ethanol-containing fuels. As a result, engines operate under "lean" or oxygen-rich conditions which may lead to engine overheating. Higher temperatures were detected for non-road engines operated on every level of ethanol in fuel (E10, E15 and E20) in the DOE study. The study identified serious risks to the engine user: three handheld trimmers demonstrated higher idle speed and experienced unintentional clutch engagement when operated on fuels with greater ethanol content. This means that small equipment could turn on spontaneously when fueled with higher ethanol blends, posing particular risks for equipment with exposed moving parts and blades like lawn mowers and chainsaws. In addition, small engines also experienced "missing" and "stalling" during operation on ethanol blends in this study.

In recognition of the above risks and concerns with E15, the president and CEO of the OPEI stated in an interview that:

"Manufacturers of outdoor power equipment and their engines say they will not honor the warranty of a product someone has been running with E15. The reason? Besides the above effects of ethanol, engines running even E10 gasoline run hotter. And with E15, the results can be dangerous, considering reports of "unintentional clutch engagement"—such as a powered-up chain saw that suddenly decides, because it's running so hot, that you've pressed the button to start the chain."

Furthermore, in deciding against allowing the use of E15 in pre-2001 light-duty vehicles, motorcycles, non-road equipment and other gasoline-powered vehicles, the EPA also concluded that the available literature suggested a higher risk of materials compatibility issues and engine/fuel component system durability concerns associated with this fuel. Taken as a whole, these elevated risks strongly suggest that owners of pre-2001 light-duty vehicles, motorcycles, boats and other non-road equipment will likely be exposed to higher ownership and operating costs as well as safety concerns if operating on E15.

Post-2001 motor vehicles: The use of E15 will expose the owners of most post-2001 light duty models to loss of warranty coverage by the manufacturer, and, hence, an increased

² Zoubul, G. et al, National Renewable Energy Laboratory, *Volvo Penta 4.3 GL E15 Emissions and Durability Test*, October 2011, available [here](#)

³ Hilbert, D., National Renewable Energy Laboratory, *High Ethanol Fuel Endurance: A Study of the Effects of Running Gasoline with 15% Ethanol Concentration in Current Production Outboard Four-Stroke Engines and Conventional Two-Stroke Outboard Marine Engines*, October 2011, available [here](#)

⁴ Knoll, K. et al, National Renewable Energy Laboratory, *Effects of Intermediate Ethanol Blends on Legacy Vehicles and Small Non-Road Engines, Report 1 – Updated*, February 2009, available [here](#)

potential for higher vehicle ownership and operating costs. With the exception of flex-fuel vehicles (FFVs) and a few late model vehicles (e.g., from GM and Ford), most manufacturers do not warrant the use of gasoline containing greater than 10% ethanol by volume in their vehicles.⁵ Chrysler, for instance, includes the following statement in its [owner's manual](#) for a model year 2013 Dodge Charger:

“DO NOT use gasoline containing Methanol or gasoline containing more than 10% Ethanol. Use of these blends may result in starting and driveability problems, damage critical fuel system components, cause emissions to exceed the applicable standard, and/or cause the “Malfunction Indicator Light” to illuminate.”

Even if the vehicle is no longer under warranty there could be unexpected damage to the consumer's vehicle. In Congressman Sensenbrenner's letter to Administrator Jackson he states that the auto manufacturers have “been nearly unanimous in their beliefs that E15 will damage engines...”⁴

The oil and auto industries, through the Coordinating Research Council (CRC), undertook a wide ranging research program to better understand the emissions, air quality and performance impacts of intermediate-level ethanol blends for consumers. Several of the studies which make up this program have been completed or will be published shortly, all of which confirm that EPA's E15 waiver was indeed premature and improper for the existing fleet of vehicles and engines not designed for E15 use.

The most recent CRC study released as part of this wide-ranging program identified risks to fuel system equipment common in the existing vehicle fleet.⁶ This effort showed that use of E15 could lead to seizure of the vehicle fuel pump and inaccurate readings on the vehicle dashboard (“check engine” light illumination, fuel gauges, etc.) on certain popular post-2001 models. It supplements a CRC Engine Durability study released in May 2012 which found that operation on E15 damaged the valve and valve seat engine parts in some of the test vehicles which are common in the existing US fleet.⁷ The CRC fuel system study results coupled with the more than 5 million vehicles represented from the CRC Engine Durability Study show that millions upon millions of consumers' vehicles could be adversely impacted with E15. In addition to CRC's research, a [recent paper](#) from Oak Ridge National Lab (ORNL) that was published by the Society for Automotive Engineers (SAE) showed that E15 can cause check engine lights to malfunction. Taken together, these results suggest that the owners of millions upon millions of post MY 2001 light-duty vehicles could be adversely impacted with E15. While some ethanol advocates have criticized the CRC studies, these criticisms were unwarranted as explained in **Attachment 2**. CRC is the gold standard for conducting fuels and vehicular research and has been doing this for over 70 years often with the support and funding from DOE, EPA, RFA, national labs, and states.

4. What is the likely impact, if any, of the blend wall on retail gasoline prices?

The NERA⁸ study indicates that the blend wall constraint could result in significant impacts on motor fuel supply – not just gasoline but also diesel fuel, thus increasing their costs. Specifically NERA states: “As the RFS2 mandate is ratcheted up every year, the fuels market will be pushed into a death spiral...Once the blendwall has been reached, the annual increase in the RVO results in decreased fuel availability and increased fuel costs to society. These increased fuel costs have a broad impact across the economy.” The recent run-up in RIN prices may be

⁵ See the summary of automobile manufacturer responses regarding E15 warranty coverage in a letter dated July 5, 2011 from U.S. Congressman F. James Sensenbrenner to EPA Administrator, Lisa P. Jackson, available [here](#).

⁶ CRC Report No. 664, “[Durability of Fuel Pumps and Fuel Level Senders in Neat and Aggressive E15](#),” January 2013

⁷ CRC Project CM-136-09-1B, “[Intermediate-Level Ethanol Blends Engine Durability Study](#),” April 2012

⁸ NERA Economic Consulting, “Economic Impacts Resulting from Implementation of RFS2 Program”, October, 2012.

indicative that the process described in the NERA report has already begun. In a recent article titled, "The Ethanol Gas-Pump Surcharge," the Wall Street Journal reported, "According to Darrel Good, a University of Illinois agriculture economist, the RIN price "could continue to rise as we approach the higher ethanol mandate for 2014" as credits run out."⁹

NERA predicts: Consumers negatively impacted⁸

- According to NERA, if sufficient RINs are not available for purchase, a refiner may have no option other than to reduce *domestic* gasoline and diesel supply in order to reduce their obligation.⁸
 - Refiners can reduce their obligation by increasing gasoline and/or diesel exports, or by reducing refinery production.⁸
- The NERA study finds that the blend wall impacts on diesel fuel, in addition to gasoline are significant.⁸
 - The highest compatible biodiesel blend is B5. Refiners are not able to meet their RFS requirements at this blending level and therefore must purchase additional RINs.
 - Increased RIN prices, due to the RIN shortage, leads to a dramatic increase in the price of diesel. The cost to move raw materials and finished goods also increases. The resulting reduction in consumption of goods and services harms economic growth.⁸
 - An extreme disruption in the commercial transportation sector results from diesel rationing.⁸

NERA concludes: The situation gets worse each year, creating a "death spiral".⁸

As renewable mandates increase each year while demand for transportation fuel decreases, refiners are forced to blend more biofuels into a gasoline and diesel pool that is further reduced by companies trying to reduce their RFS compliance obligation. According to NERA, this increases the cost of fuel.⁸

- The NERA study shows that the destructive cycle repeats, compounding and further increasing the cost of fuel and reducing supplies.⁸
- Transportation fuel cost increases and fuel supply disruptions ripple adversely through the economy. NERA estimates that diesel costs could go up 300% and gasoline up 30%.⁸
- GDP decreases by \$270 billion in 2014 and decreases by \$770 billion in 2015.⁸
- American household average consumption decreases by \$1,300 in 2014 and by \$2,700 in 2015.⁸
- American worker take-home pay decreases by \$27 billion in 2014 and by \$580 billion 2015.⁸

5. What is the timing of the implementation challenges related to the blend wall? Will some entities face difficulties earlier than others?

In the early days of RFS2, ethanol remained economically priced for the most part, so more gasoline was blended with ethanol than was required by EISA07 in 2010, 2011 and 2012. This overblending created excess RINs and these were carried forward into the following year subject to EPA's 20% limitation.

One of the major problems with EISA07 is the too rapid increases in the mandated renewable fuels volumes from year to year. In 2012 (final numbers are still not available), it appears that

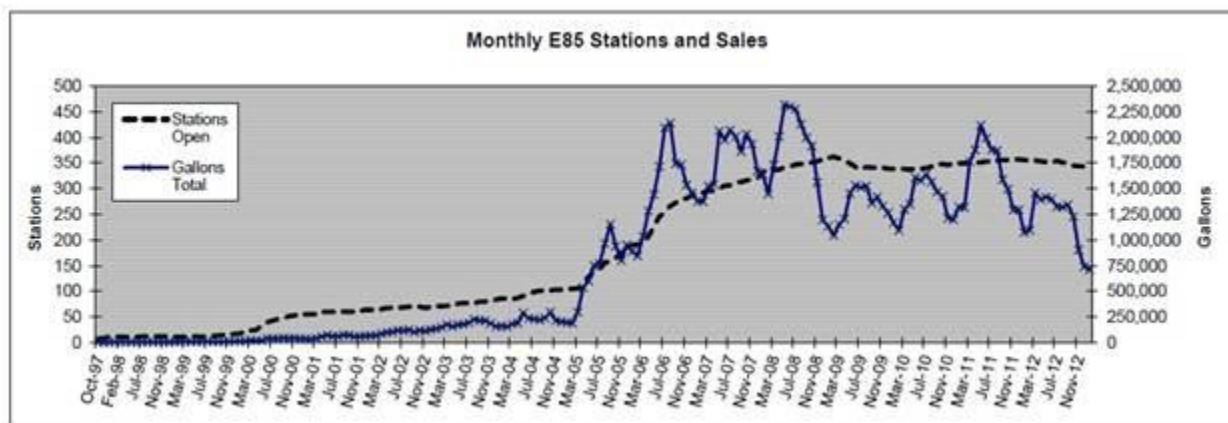
⁹ <http://online.wsj.com/article/SB10001424127887323826704578354260914712792.html?KEYWORDS=RINS>, March 2013

the amount of ethanol blended in gasoline was very close to the mandated ethanol volumes. However, in 2013 the consumption of gasoline is forecasted to drop further while the mandated volumes of ethanol continue to rise. It is likely that at least some obligated parties will rely upon carry-over RINs for compliance in 2013. As illustrated in the NERA⁸ study, it will become increasingly difficult to rely upon carry-over surplus RINs for compliance. According to the NERA study as early as 2013, and no later than 2014, no surplus RINs will be produced. NERA finds that by 2015-2016 compliance with the RFS2 in its current form will likely be infeasible, which would result in significant damage to the economy. With all obligated parties being aware that 2014 RIN production and 2013 RIN carry-forward will fall short of the 2014 RIN obligation, each company will probably attempt to maximize their 2013 RIN carry-forward (up to 20%). However, the surplus RINs from 2013 amount to less than 10% of the 2014 obligation. Companies that want to carry forward 20% of their RINs to help with 2014 compliance will likely bid against other companies that need the RINs for 2013 compliance. This is akin to a game of musical chairs where there is more need than chairs. 2013 will likely end with many obligated parties being forced to carry a RINs deficit into 2014. Since the situation will worsen in 2014 and get even worse in 2015, there is unlikely to be an opportunity for obligated parties in a RIN deficit to acquire the RINs needed to comply with the EISA mandates. Any deficit carried forward into 2014 must be cleared in 2014. In addition, the party that carries a deficit forward in to 2014 must fully comply with its RVO in 2014. Thus, carrying forward a deficit in to 2014 where the RVOs become even bigger in 2014 is not a solution to the blend wall problem.

6. Could the blend wall be delayed or prevented with increased use of E-85 in flexible fuel vehicles? What are the impediments to increased E-85 use? Are there policies that can overcome these impediments?

Increased E85 use might ease, but will not prevent the blend wall, due primarily to lack of consumer acceptance of E85. While obligated parties are attempting to maximize E10, there are still customers who demand E0 for their boats, motorcycles and small engines. In fact, in 2012, the average ethanol content of the gasoline pool was only 9.7% by volume because the demands for E0 were larger than all of the E85 and E15 sold.

The states of Minnesota and Iowa experiences, since they have been some of the most aggressive in promoting E-85, is indicative of the lack of consumer acceptance of E85. The chart below from the [Minnesota Department of Commerce's Division of Energy Resources](#), has a lot to say about one important facet of the current debate over ethanol mandates contained in the Renewable Fuel Standard.



The dotted line represents monthly numbers of service stations in Minnesota offering E85 – fuel containing up to 83 percent ethanol. The other line reflects monthly sales of E85 in Minnesota, [which ranks number five in the nation in ethanol production.](#)

What we see is that despite [an aggressive push with promotions and massive state investment](#), the state has gone from recorded E85 sales of just under 18 million gallons in 2006, when there were 287 stations selling the fuel, to less than 15 million gallons of E85 sales in 2012 (a 17% decline) – even though there were 343 stations selling the fuel. We also see below that demand for E85 has fallen even further in Minnesota in the early part of this year, from [monthly station average sales of 3,492 gallons in 2012 to 2,080 so far in 2013 \(a 40% decline\)](#). So, though there are more stations offering E85 for sale in Minnesota now than a few years ago, significantly less of it is being bought by consumers.

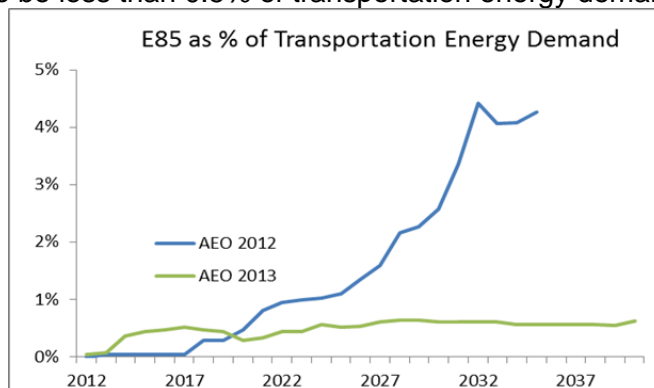
Historical E85 Sales			Monthly Station Avg Vol (gal)			
Year	# Stations	Total Yearly Volume Est.	Overall	Metro	Rural	Gov't/Univ
1997	11	6,607	239	443	206	159
1998	12	37,353	293	338	234	593
1999	17	99,514	644	882	494	785
2000	55	377,653	817	893	776	834
2001	64	704,120	977	998	950	1,055
2002	69	1,257,065	1,540	1,882	1,193	1,398
2003	84	2,168,305	2,354	3,113	1,909	1,080
2004	103	2,626,550	2,297	2,982	2,102	859
2005	181	8,154,977	4,637	7,272	3,796	717
2006	287	17,913,153	6,124	9,690	4,482	685
2007	320	21,412,686	5,825	9,971	4,198	897
2008	357	22,515,438	5,453	9,147	4,048	866
2009	339	15,925,119	3,832	6,543	2,608	1,386
2010	349	16,643,232	4,059	6,533	3,130	1,476
2011	357	19,804,100	4,677	7,617	3,448	1,389
2012	343	14,691,585	3,492	5,507	2,592	2,041
2013	342	711,360	2,080	3,796	1,456	1,041

Iowa, another ethanol friendly state, has experienced a similar trend, showing a 15% decline in E85 sales from 2011 to 2012 (from [10.7 million gallons](#) to [9.1 million gallons](#)), despite adding 23 stations (from [171](#) to [194](#)). While fuel consumption as a whole slowed between 2011 and 2012, 26% and 15% decreases in E85 sales from 2011 to 2012 in Minnesota and Iowa, respectively are stunning when compared to a minuscule [0.6%](#) decrease in gasoline sales over the same period. Why? In the marketplace the merits of products are judged by consumers. What's being seen nationally is [weak consumer demand for both E85 fuel](#) and [flex-fuel vehicles](#) (FFVs) that can use E85. No doubt, [reduced fuel economy on E85](#) is a leading cause. It appears that consumers realize that while E85 is often priced lower than gasoline per gallon, E85 [can cost more to go the same number of miles](#). As the example below shows ([using DOE data for the average fuel economy of E85](#)), a consumer's fuel economy could go from 20 miles per gallon to nearly 15 mpg and they would have to fill up 32% more often.

	Gasoline	"E85"
FFV MPG:	20	15.2
Vehicle Tank Size (gals):	10	10
Vehicle Range (miles)	200	152.0
% Increase in "E85" refuelings to get equivalent gasoline range:		32%

This dynamic undermines an argument by ethanol supporters in the RFS debate that federal ethanol mandates could be reached if refiners simply made more gasoline with higher than 10 percent ethanol content, E85 or E15 (up to 15 percent ethanol). The marketplace (with Minnesota as a microcosm) appears to be signaling pretty clearly how it feels about E85. Making more of it in the face of weak consumer demand would not address issues with the RFS. A March 14, 2013 report by the Congressional Research Service states that "Turnover of the U.S. automobile fleet has slowed during the recession, making it more difficult to integrate

FFV's into the fleet"¹⁰. In addition, automakers could be prompted to either slow down or abandon production of FFVs based on recent draft EPA guidance¹¹. If finalized, the guidance would scale back the existing GHG credit for FFVs for model years 2016-2019 based on the assumption that they are fueled with E85 20 percent of the time, compared to the estimate of 50 percent that is currently employed. This revised assumption likely remains overly optimistic (especially in the near term) given the abundant evidence of a lack of significant current consumer refueling of FFVs with E85 (discussed above). Nevertheless, if the automakers perceive this change to be a disincentive for FFV production, it would further weaken future consumer demand for E85. The chart below shows EIA's projections in 2012 and 2013 of E85 fuel use as % of transportation energy in the U.S. Note the sharp decrease in the projections – E85 fuel is expected to be less than 0.5% of transportation energy demand.



7. Is E-15 misfueling unavoidable? Are there lessons from the labeling and dispensing of diesel, E-85 and other fuels that prevent their misfueling that can also be applied to E-15? What specific actions are companies taking to address potential misfueling concerns under MMPs?

The EPA has stated that misfueling mitigation is sufficient to protect the consumer from purchasing E15. EPA's recommended label is shown to the left below. To our knowledge this is the label that is being used in stations selling E15.

EPA's Label



EPA's Proposed Label



API's Proposed Label



We believe that EPA's label may be insufficient to protect consumers for the following reasons:

- EPA weakened its originally proposed label (shown above to the center), which had "cautionary" language in red lettering which the consumer will more readily identify and

¹⁰ Congressional Research Service Report, "Renewable Fuel Standard (RFS): Overview and Issues, March 14, 2013, p. 31.

¹¹ 78 Federal Register 17660, March 22, 2013

read, to one that simply says “Attention” which the consumer will probably ignore and mistake for some kind of promotion.

- There was significant misfueling in the transition to unleaded gasoline to unleaded gasoline even with labels and different nozzles. Similarly, E15 is being sold as a “gasoline” which will lead to similar confusion.
- The recent misfueling incident with the President’s vehicle shows that if it can happen to him, it can happen to anybody.

API’s label that we recommended that EPA adopt is shown to the right above. Our recommended label would have clearly warned the consumer about which vehicles and equipment E15 could be used in, reminded them to first check their owner’s manual, and informed the consumer that fuel economy might be lower. EPA ignored our recommendations. API and several other stakeholders have challenged EPA’s decision on its label and misfueling mitigation plan because it could have been more effective in preventing misfueling, and therefore it was arbitrary and capricious. That litigation is being held in abeyance until the E15 partial waiver case is resolved.

But even more concerning than misfueling is that consumers might use E15 in 2001 and newer vehicles – i.e., vehicles that EPA has approved. Automobile manufacturers do not support the use of E15 in such vehicles as described above, and the CRC studies described above indicate that the use of E15 in such vehicles may cause damage.

8. Can blend wall implementation challenges be avoided without changes to the RFS? Is the existing EPA waiver process sufficient to address any concerns? If the RFS must be changed to avoid the blend wall, what should these changes entail? Should any changes include liability relief or additional consumer protections for addressing misfueling concerns?

The RFS is irretrievably broken, and should be repealed. It requires blending of ethanol in gasoline at levels much higher than the 10% limit used in the design, certification, and warranties of the vast majority of vehicles and fuel retail infrastructure to date. As biofuel volumes continue to increase in an environment of declining fuel demand, the compatibility concerns do not subside in the future.

EPA’s waiver is statutorily limited to one year, and the Administrator may extend it. If EPA were to exercise this authority, an unacceptable level of uncertainty would remain in the market that would depend on a year-by-year decision from EPA. The uncertainty in the market today may be a contributor to the RIN price escalation, even though on average companies can comply. Preventing market volatility that hinges upon an annual EPA decision requires repeal of the RFS program.

The core problem with the RFS is the volumetric basis of setting biofuel targets. Repeal is necessary because a revised volumetric mandate would only create new blend walls later in the program. The market has incorporated ethanol into the transportation fuel mix and it is an important component that will continue to be used in the absence of a mandate. The free market is best at picking winners and losers in the biofuels market.

EPA’s premature and improper decision to allow E15 into the marketplace prior to the completion of industry testing was improper and should be rescinded. Short of rescinding the E15 waiver, Congress should provide liability protection for suppliers of E15. Millions of 2001 and newer vehicles approved to use E15 could be damaged from its use. API is currently

challenging the legality of EPA's partial waiver before the U.S. Supreme Court.¹² Judge Brett Kavanaugh of the U.S. Court of Appeals for the D.C. Circuit succinctly summed up the merits of API's litigation: "The merits are not close. In granting the E15 partial waiver, EPA ran roughshod over the relevant statutory limits."¹³ Indeed, EPA's partial waiver for E15 is illegal and improper because "in order to approve a waiver, EPA must find that the proposed new fuel will not cause *any* car model made after 1974 to fail emissions standards."¹⁴ Judge Kavanaugh concluded that "EPA's E15 waiver thus plainly runs afoul of the statutory text. EPA's disregard of the statutory text is open and notorious – and not much more needs to be said."¹⁵

Liability relief should be provided for the entire supply chain (refiner/importer, biofuel producer, terminal, distributor and retailer). The use of renewable fuels such as ethanol in domestic fuels is not a matter of choice by the private sector; rather, it is mandatory as a result of the renewable fuels mandate established in section 211(o) of the Clean Air Act. Product liability relief legislation should remove legal barriers standing in the way of new fuels approved by the EPA and reduce the associated costs of entry, helping the market achieve the nation's energy policy objectives. It should:

- Ensure that entities that manufacture and market fuels which are authorized and registered by the Federal government, in accordance with Federal regulations, cannot be held retroactively liable for damages caused by fuels that the Federal government previously determined to be safe to the public and the environment;
- Authorize a new pathway for retailers to ensure their storage and dispensing equipment is safe and legally recognized as compatible with the new fuels; and,
- Require that fuel marketers who place the EPA label on dispensing equipment to inform consumers of the approved uses of new fuels and place responsibility for any complications associated with misfueling on the party who chooses to ignore that information.

9. Have the 2017 and Later Model Years Light Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy standards for cars and light trucks changed the implementation outlook of the RFS?

Yes and significantly. When Congress passed the Energy Independence and Security Act of 2007 (2007 EISA) that significantly expanded the RFS program, it was relying on projections of transportation fuel demand provided by the US Energy Information Administration (EIA) which did not incorporate the growth in new vehicle fuel economy which has since occurred and which is projected to accelerate in the future as a consequence of the 2017 and later light duty vehicle Corporate Average Fuel Economy (CAFE) and Greenhouse Gas (GHG) emissions standards. The chart below shows, for instance, that EIA is currently projecting the fuel economy of new model year 2022 cars to be 48.7 mpg as a result of the tighter standards, or 15.6 mpg (47%) higher than the comparable estimate made back in 2007 – which did not comprehend the more stringent CAFE requirements. Similarly, the fuel economy of new model year 2022 light-duty trucks is currently projected to be 34.9 mpg, or 9.3 mpg (36%) higher than the comparable estimate made by EIA back in 2007.¹⁶

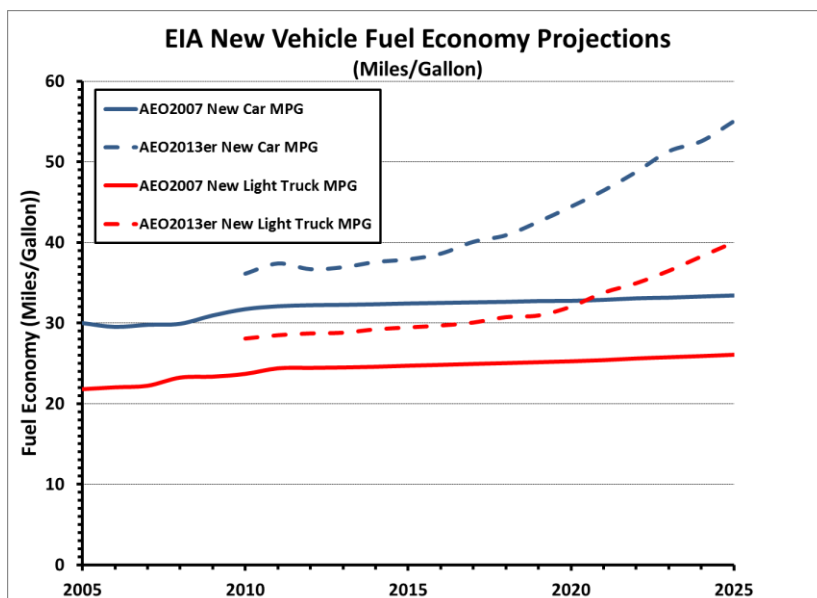
¹² *Grocery Manufacturers Association et al, v. Environmental Protection Agency*, No. 12-1055

¹³ Waiver opinion, p. 20 (Kavanaugh, J., dissenting).

¹⁴ *Id.* at 21.

¹⁵ *Id.*

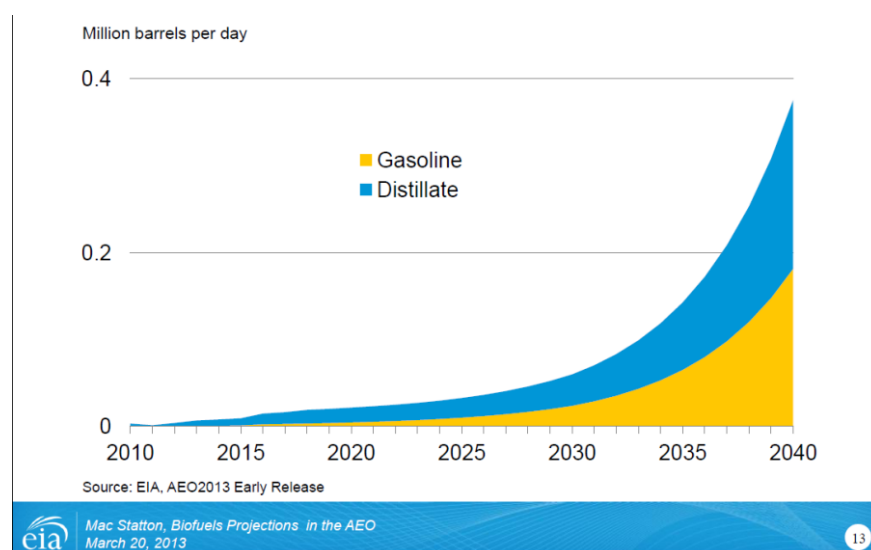
¹⁶ See US Energy Information Administration *Annual Energy Outlook 2013 Early Release*, and earlier editions available [here](#)



Largely as a consequence of the expected significant growth in new vehicle fuel economy, EIA has substantially downgraded its outlook for future trends in gasoline demand (See Response to Question 1 for latest projections).

10. What other methods, including the use of drop-in fuels, are available to industry to ease the challenge posed by the blend wall?

Drop-in biofuels are not currently available to industry, nor are they projected to be available in the near term. The chart below shows EIA's drop-in fuels projections. Note the small scale on the y-axis – drop in gasoline and diesel will be less than 0.02 million barrels per day in 2020, a meager 0.15% of the projected gasoline, E85, and distillate demand. Based on these projections, it is obviously that drop-ins cannot ease the challenge posed by the blend wall for the next several decades.



11. What are the impacts on renewable fuel producers if the RFS is changed to avoid the blend wall?

Refiners will continue using ethanol and other biofuels without the RFS mandate. Ethanol has valuable blending qualities – enhancing octane, helping fulfill environmental requirements, and meeting consumer demand – and there is also potential to increase exports of ethanol to overseas markets. The RFS was enacted at a time when our nation’s energy landscape was far different. Today, with domestic production of oil and natural gas on the increase, we are steadily reducing our dependence on foreign sources, with benefits well beyond what the RFS program has achieved.

RFS 1&2 FLAWS



- ♦ **As designed by Congress in EPACT05 and EISA07 the RFS's have many problems and two major flaws.**
 - **Wrong obligated party**
 - **Refineries never see or touch current biofuels. Rather than place direct responsibility on biofuels blenders, Congress decided to use a very complicated, indirect and problematic credit system.**
 - **Failed to properly align the biofuel mandates with the ability of the vehicle fleet to use them**
 - **This has resulted in the approaching E10 blendwall problem**

What is the E10 blendwall?



- ♦ The E10 blendwall is the point at which no more ethanol can be blended into the US gasoline pool due either to regulation or infrastructure.
- ♦ Currently there are only two legal routes for blending ethanol
 - E10 – blending up to 10% ethanol in gasoline
 - E85 – can only be used in FFV's
 - FFV's make up less than 3% of gasoline fleet
 - Currently less than 1% of FFV's use E85

When Does Industry Hit the Theoretical E10 Blendwall?



- ♦ 2009 & 2010 – *Obligated parties only*
 - Not small refiners
 - Required to blend over 10% (must rely on RIN market)
- ♦ 2012 – If gasoline demand reductions continue
- ♦ 2013 – Current estimate based on EIA projections (AEO2009)
- ♦ 2014 – Assuming cellulosic biofuels waivers which also reduce overall mandate

Other Blendwalls*



- ♦ **E12 Blendwall - 2014**
- ♦ **E15 Blendwall - 2017**
- ♦ **E20 Blendwall - 2020**
- ♦ **E85 Blendwall - 2020**

*Based on EIA projections (AEO2009)

How is the Real World E10 Blendwall different from the Theoretical Blendwall?



- ♦ The real world blendwall results from some E10 blending infrastructure not being installed due to remote locations and lack of sufficient and timely financial incentives.
 - Also includes the failure to use existing blending infrastructure due to state blending laws/bans.
- ♦ The real world blendwall will be hit earlier than the theoretical blendwall

HOW TO GET TO ETHANOL LEVELS ABOVE E10?



- ♦ **E15/E20-We really know nothing about these**
 - No ASTM or U/L specifications
 - No real world experience
 - Limited research
 - Vehicle warranty/owners manuals-no mention
 - Retail infrastructure limitations
- ♦ **E85**
 - Requires FFV's and retail infrastructure
 - Doesn't work in non-FFV's (97% of current fleet)
 - 25% Fuel economy decrease
 - Gives ethanol in E85 a value less than 75% of gasoline
 - Problems meeting ASTM specs and U/L certification

Status of Midlevel Ethanol Engine/Vehicle Research



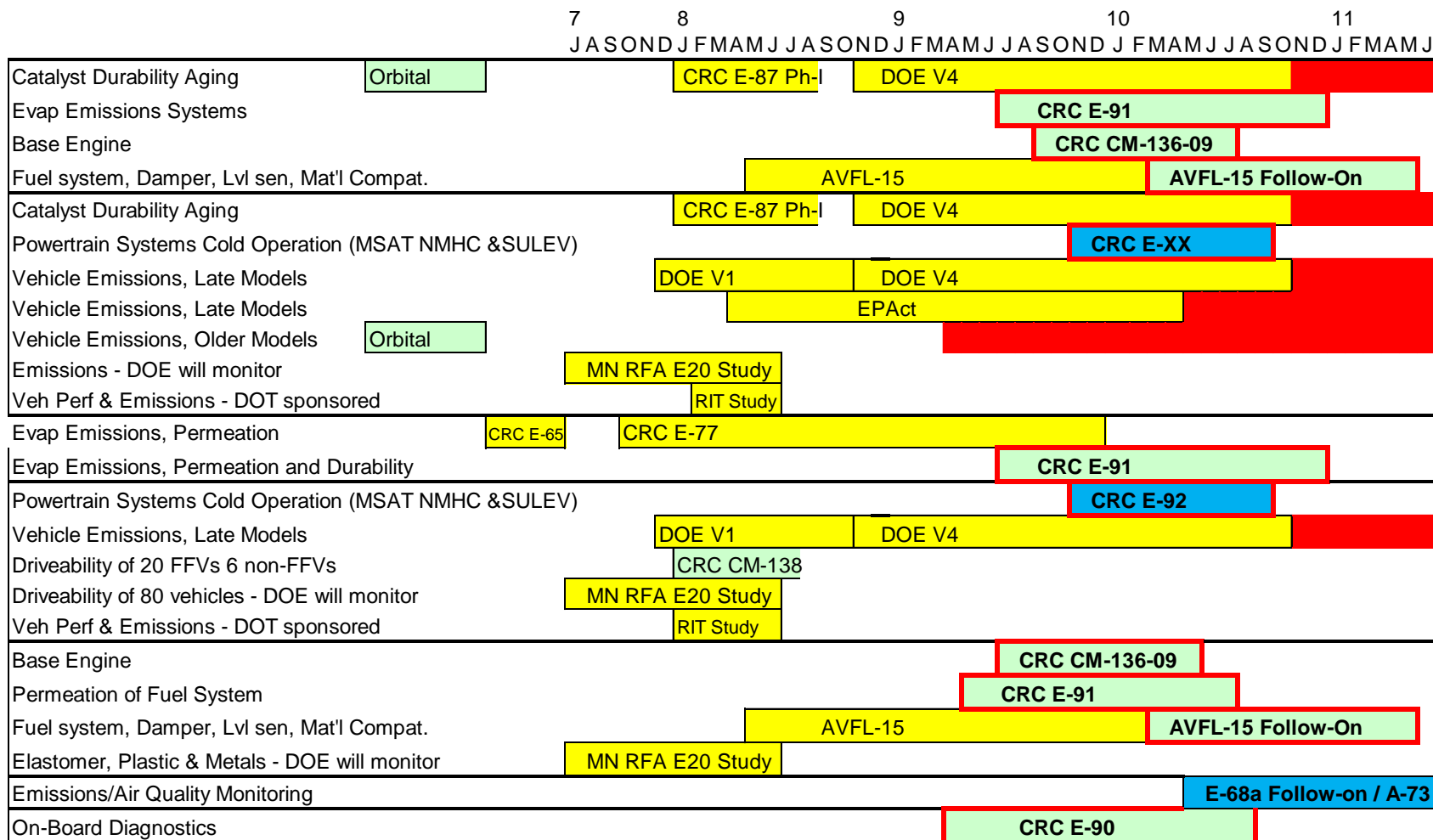
- ♦ Recently there have been many Midlevel research studies reported by DOE, universities and ethanol interests
 - Mainly looked at short term effects
 - Many had very small vehicle fleets
 - Some were not peer reviewed
 - Some had inexplicable results
- ♦ The Auto and Oil Industries have worked with DOE and EPA to find data gaps in the existing research and define a complete research program to cover these gaps.
 - CRC has been tasked to develop many of these research programs
- ♦ The Oil industry is working with DOE, EPA and OSHA to determine what technical and regulatory barriers there may be to storing and distributing a mid-level ethanol blend fuel in the existing retail infrastructure

Components of Test Plan



- ◆ **Fuel Storage and Handling**
 - Pump, Tank, Level Sender, Fuel Line Damper, Fuel Injector and Rail
- ◆ **Base Engine Durability**
- ◆ **On-Board Diagnostics Evaluation**
- ◆ **SULEV & Cold Ambient (20F) Operation**
- ◆ **Catalyst Durability & Degradation**
- ◆ **Evaporative Emissions**
 - Long-Term Permeation and Durability of Fuel System Components
- ◆ **Emission Inventory and Air Quality Modeling**
- ◆ **In-use vehicle driveability**
- ◆ **Non-automotive engines must also be tested using a plan endorsed by the small engine community**

CRC, DOE and other Midlevel Ethanol Highway Fleet Research Programs



Key:



Comprehensive

Comprehensive in development

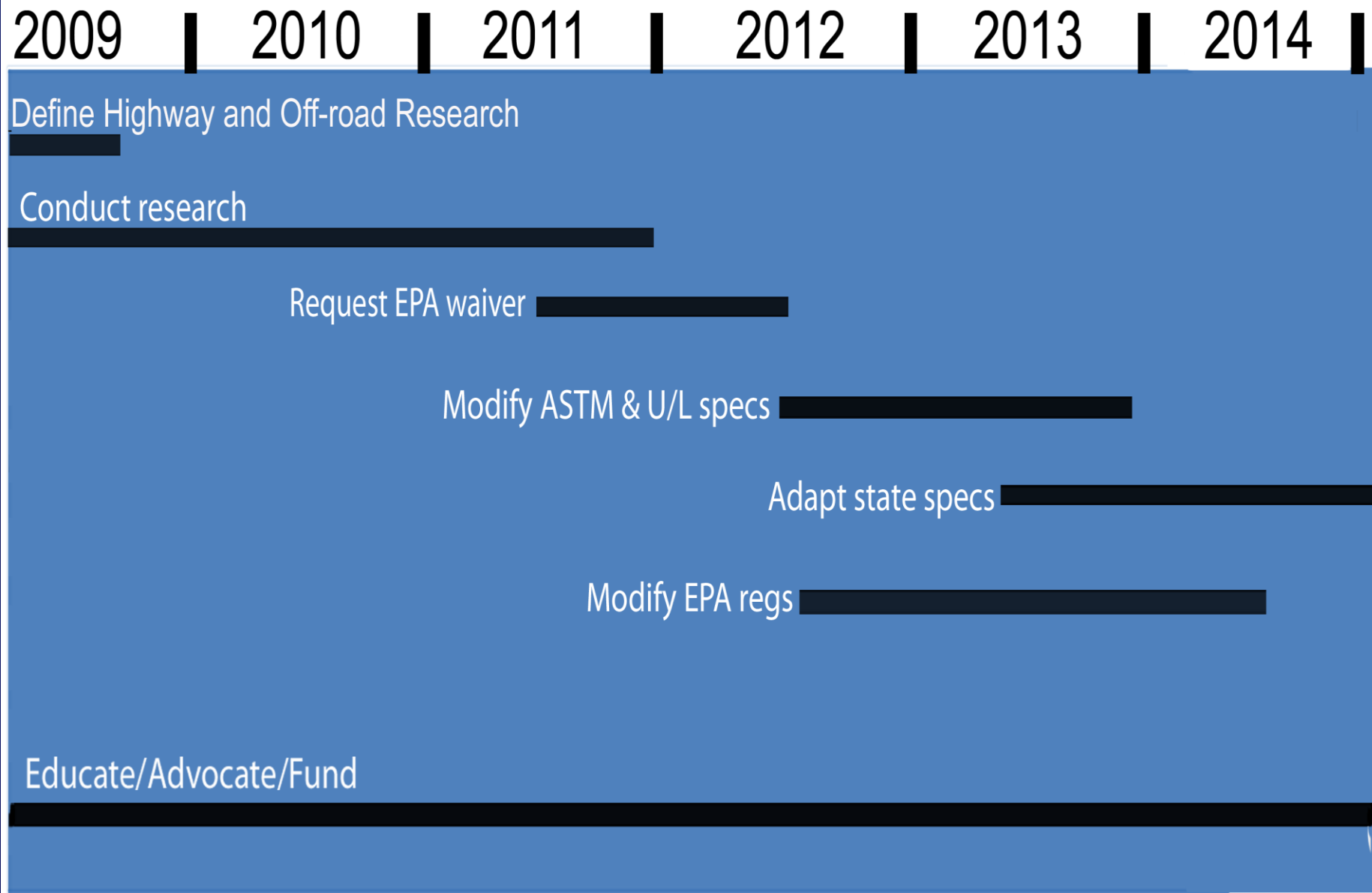
Preliminary, partial or screening

Gap

Programs with Red Borders are Unfunded

I Study includes preliminary data for tests & materials compatibility.

Mid-level Ethanol Approval Timeline



Some Thoughts



- ♦ Midlevel ethanol research, EPA waiver and the various other approval processes will not be completed in time to avoid the E10 blendwall.
- ♦ Significant retail volumes of E85 and as well as ethanol blends above E10 are likely to encourage misfueling problems.
- ♦ Only completion of the full research program has a chance of providing the data for deciding the appropriate level of ethanol for the current fleet and the future fleet.
- ♦ Until EPA approves an E?? waiver and the various other approval processes are complete, the levels of mandated ethanol in the RFS's must be aligned with the current vehicle fleet capability.

Next Steps



- ◆ **Need to acquire funding for unfunded projects**
 - Without timely funding, research completion date will keep moving out on a month by month basis
- ◆ **Need to carefully manage projects**
 - Nothing of this magnitude has been attempted since the last Auto/Oil program
 - Member companies have fewer experts and fewer resources
 - May need significant retiree support
- ◆ **Need to continuously review project results to identify any new data gaps that become apparent**

